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MODERN INDUSTRIAL HISTORY

BY

F. R. WORTS, M.A.

SENIOR HISTORY MASTER, THE GRAMMAR SCHOOL, BRISTOL
LATE LECTURER IN HISTORY, CULHAM AND SALTLEY TRAINING COLLEGES

SECOND AND REVISED EDITION

NEW IMPRESSION

HODDER AND STOUGHTON
LIMITED LONDON

1930

Printed in Great Britain for the UNIVERSITY OF LONDON PRESS, LTD.,
by HAZELL, WATSON AND VINEY, LD., London and Aylesbury.

FOREWORD

IN confining this small history of British Industry and Commerce to the *modern* period, I hope to serve the need of many young students who have neither the time nor the desire to begin this subject in the days of our Teutonic ancestors. The modern period is so clearly divided from the foregoing periods by the Industrial and Agrarian "Revolutions" that it allows of a separate and comprehensive treatment. The necessity of making these "revolutions" *real* to the student, however, is at once admitted as an essential of this plan. I have tried to do this.

The main features only of modern British Industry and Commerce fall within the scope of this book. My sole purpose is to arouse intelligent curiosity in the student: it is the teacher's privilege to satisfy and develop this quality. Subjects which excite fierce controversy to-day—*e.g.* the Capitalistic System, the Co-operative Movement, Trade Unionism—have necessarily a place in my scheme: aware of the issues involved I have attempted, without "bias," I hope, to show that such movements are but developments of modern economic and industrial life. Full discussion of such subjects is healthy; but, again, it is the teacher's right to guide it.

A few book references must be given. Townsend Warner's *Tillage, Trade, and Invention*, Salmon's *An Introductory Economic History of England*, J. St. Loe Strachey's *Industrial and Social Life and the*

Empire, are three excellent little books, with which this small history can be supplemented by the young student. If more advanced reading is wanted, Townsend Warner's *Landmarks in English Industrial History* ought certainly to be studied. Traill's *Social England*, Toynbee's *Industrial Revolution*, etc., and Schloesser's *Trade Unionism* are also recommended. Archdeacon W. Cunningham's *The Growth of English Industry and Commerce in Modern Times* stands apart. It is a classic work, and indispensable to the advanced student. Any use I have made of the above works I gratefully acknowledge here.

The *Romance* chapters on Mining, Railways, and Shipping are meant (as their title suggests) to break the monotony of plain history. They may "rescue" interest (if it be necessary) as well as impart knowledge. My thanks are due to Mr. R. E. Short and Mr. J. S. Cox for their valuable help in regard to these chapters; also to Mr. S. C. Pope (Bristol Co-operative Society) for revising the proof of Chapter XX.

Primarily this book is intended for use in the new system of Day Continuation Education. It is, however, both wide and difficult enough—in scope at least—to aid the older "beginner" in this subject as well as the man who is making use of his opportunities for self-education. The questions marked by an asterisk are meant for the latter classes of students.

F. R. W.

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CHAPTER I

THE MEANING OF INDUSTRIAL HISTORY : ITS CHIEF SUBJECTS OF INTEREST

INDUSTRIAL history is the story or record of a Nation at Work. To work is a law of life—a law that must be obeyed. If a man wants to live he must work ; if he wants to live well he must work hard ; if he wants to “ succeed ” in life and become great, he has got to work very hard and very skilfully : so it is with a nation. Work earns wealth : the wealthier a nation is the greater it is ; for wealth brings power : but the wealth of a nation can only be gained by the energy and skill of its people in their industrial life.

Great is the importance of Industrial History. It tells *how* a nation works, and, consequently, how it lives. The history of kings and queens, of wars at home or abroad, of discovery of new lands, or the building up of empires—is generally exciting and perhaps necessary ; but lying as a sure foundation *beneath* it all is the wonderful story of Industry and its progress—a story telling how men began the fiercest of all fights—that against Nature in order to live—how, after crude beginnings in the dim barbaric past, new methods and new processes of *doing necessary things* were slowly found or invented—how the *work of men* progressed in a thousand ways until it became organized and controlled on the gigantic scale it is to-day. It is a strange story, not often told and quickly forgotten. Yet, only by going back and learning it, can the growth of

the mammoth machine of modern organized industry—the machine which produces the vast wealth to support the life of countless millions—be explained and understood.

To give this explanation is the true object of Industrial History. But the *present* can only be understood in the light of the *past*.

Industrial progress means the advance from stage to stage in the growth of industry and the organization of industrial and commercial life. Progress has never been at a uniform pace: it has always come in “fits and starts,” so to speak. For hundreds of years the advance is very slow: then, in a short space of fifty to a hundred years “revolutions” occur in the arts and crafts of work. In the modern world the advance has become faster and faster, owing to the inventions of men, until we are being whirled along at a dizzy speed and the whole of the civilized world is humming with the throb of machinery and the noise of labour. Truly, civilization knows no more remarkable story than this of modern industrial development. It is a living witness to the old truth: “Necessity is the mother of invention.”

No one with eyes to see can look at Great Britain to-day and fail to be impressed by her tremendous industrial activity. Her great towns are all “hives of industry”; her manufacturing and mining districts are world famous for their huge annual “out-puts:” her shipyards are many and all sternly busy: her ports are always full of shipping and tireless in their commercial energy; her millions of people are *workers*—all playing some part in her vast organization of industrial and commercial life. *It is this power to work that has made Britain so wealthy and so great*—famous, as the “Workshop of the World” in the eighteenth and nineteenth centuries.

It is this power to work also that has been mostly responsible for the building up of Britain's mighty empire. That she fought for it and won it is true: but it is equally true that had her people not *worked* to develop it, it would not be so rich and flourishing as it is to-day: it would not be the envy of the world.

Thus, to understand rightly Britain's greatness either as a nation or as an empire-builder, it is necessary to read, if not to learn, the story of the rise and growth of the industrial genius of her people—the genius which taught them how to master the secrets of agriculture, how to discover raw materials and mineral treasures and use them properly, how to adapt occupations and trade to the varying needs of time and the demands of inventions, how, in short, to keep ahead always in the stern race for the great prize of national power and wealth. We ought never to forget that the colossal world-wide trade we now command had its humble beginnings in our rude manufacturing and home trading of centuries ago; and all our present industrial and commercial greatness is the result of hundreds of years of painful effort and ever-progressive *power to work*.

Looked at from this point of view the industrial life of Britain becomes at once foremost in interest and importance.

The importance of this story of Britain's work is also great for the British people—the workers. It is, if rightly understood, *the only true history of the people themselves*.

CHIEF SUBJECTS OF INTEREST.—There are five main lines of enquiry to follow in this study: each deals with one division of industrial life: each therefore is in itself a subject of chief interest. They are:—

- | | | |
|-----------------|----------------|---------------|
| i. Agriculture. | iii. Commerce. | v. Transport. |
| ii. Industry. | iv. Finance. | |

I. *Agriculture*.—Pursuing this line of enquiry the story of the art of tilling, and of the conquest of the soil will be learnt. All wealth comes from the land. Chiefly, however, do we live by eating of the fruits of the earth. The science of agriculture is, therefore, first in importance. Wheat, barley, rye, vegetables, root crops, etc., are so cheap and abundant to-day that the age-long struggle of men in learning how best to produce them is forgotten. The very methods of cultivating the soil to-day are altogether different from those used by our forefathers. Thus many a stage of progress can be traced in this particular industry: indeed, “revolutions” have taken place in it from time to time. That Britain is to-day dependent on foreign supplies of grain and food needs explanation; that our land was once self-supporting and mainly agricultural in its life—and *is so no longer*—raises many questions: again, the huge strides made in modern days in the invention and use of machinery in farming, opens up a subject full of interest. What were the old methods? What are the new? Is the science of agriculture still progressing? Is cattle-breeding more profitable than raising crops?—a very serious question once! Are there too many people in the world to feed? These and many similar serious matters all demand answers. The full importance of this subject of agriculture can, however, be swiftly seen when it is understood to be the *basis* industry—*i.e.*, the occupation which is necessary to feed us.

II. *Industry*.—Industry, strictly speaking, is the manufacture, creation or production of goods necessary for social life generally. This story of industry tells of the rise and growth of the trades and professions in which men labour; of the wonderful discoveries and inventions which have so profoundly changed the processes of manufacture from time to

time ; of the mining of the invaluable raw materials from mother earth, *e.g.* coal, iron, salt ; of the beginnings of the ultimate marvellous modern triumphs of machinery and engineering skill ; of the origin of the factory system and its development till to-day ; of the creation of the state of industrial life we call Capitalism ; of the giant industries, such as, steel, iron, coal, textiles, shipbuilding, etc., which have made the great wealth of Britain ; of the organization and government of the millions who labour in them.

Clearly, Industry is an immense subject—one that takes into view the whole of the working life, power, and interest of the nation. On the healthy state of our industries our present and future success depends. No better plea than this can be found to justify the study of this subject.

III. *Commerce*.—Commerce is the trading or the disposal of the production of Industry by purchasing and selling. It is the system by and in which distribution is made. The merchant class govern this sphere of our working life. They are the medium between the industries and the great body of consumers. To trade successfully—to increase and increase trade until the world-market is captured is the aim and the business of commerce. The greater the success, the richer does the nation become. Our commercial skill and activity ought to be the envy of other peoples ; it called forth Napoleon's gibe that we were "a nation of shopkeepers." To-day we have stern opposition to face. Powerful trading rivals like the U.S.A. and Japan are competing with us in the world-market. To keep our lead we must work our industries harder, and give our merchants a greater output with which to deal. The science of commerce is very old. It has always necessarily followed upon industry. But the modern system of

commercial and business methods is so immense and complicated—so different in its scope and organization from that of the olden days—that it is both fascinating and necessary to trace how it has arisen, changed, expanded, and been organized to meet the needs of the present. Commercial work is wholly distinct in character from that of industry proper; yet it is absolutely essential in that it performs the vital function of disposing of the production of industry proper to the best advantage.

IV. *Finance*.—This is an equally important line of study. Industry must be financed to-day. Indeed, wealth is the beginning and the ending of modern industrial effort. The whole of our system of Capitalism is built and organized upon a money basis. The difficult questions of money, banking, credit, stock, and company promoting, etc., are, therefore, inseparable from modern industrial life. Centuries ago, when industry was simple, these questions did not worry people. How money began to play a bigger part in the development of our working life, how banks arose, and the tremendous yet delicate system of modern finance and credit grew up stage by stage to meet the changes taking place in the expansion of industry and commerce, can only be learnt by tracing the history of this subject from earlier times.

V. *Transport*.—Transport is that form of our industrial life which provides for the moving or carrying of goods. The modern world is exceedingly rich in its ways and means of transport. As a vast network the railways, shipping lines, tramways, rivers, canals, and roadways without number spread over the world—all of them highways along which the commerce of all nations can pass easily, quickly, safely, from anywhere to anywhere. It is a wonderful sight—and a still more wonderful fact—if it can

be seen and realized properly—this world-wide system of transport lines. And, now the aeroplane is here; very soon its services will enormously increase the means of transportation. How did all this come about? What were the chief steps in the creation of this wonderful system? How has Transport gradually been so organized into its machine-like regularity of to-day? Less than 200 years ago very little means of transport existed. Pack horses and mules then carried goods in panniers—280 lbs. to the load—over mere tracks of roads in England from town to town! The story of industry, if rightly told, will explain the mystery and the triumph of modern transportation. It is necessary too that it should. Without this highly organized system it is clear that modern industrial and commercial life would be impossible.

SUMMARY.—Such are the five chief subjects of interest in this sort of history. Although separated here for description, they are in reality inseparably connected one with the other in the gigantic structure of the organized industrial or working life of a nation, or even of the world.

EXERCISES

1. What is the importance of Industrial History (a) to the worker? (b) to the nation?
2. What are the chief lines of enquiry?
3. Which is the most important of these "lines"? Give reasons.
- *4. Discuss the differences between Industrial and other forms of History.

CHAPTER II

WHERE TO BEGIN MODERN INDUSTRIAL HISTORY : SUMMARY OF CONDITIONS ON THE EVE OF THE EIGHTEENTH CENTURY

OUR modern industrial and commercial systems have their beginnings in the eighteenth century. During this century the famous "revolutions" in both industry and agriculture took place. These revolutions—as we shall see—so completely changed all the existing methods and ideas that a new start in these two spheres of life was made : the break from the Past was absolute.

Our history must therefore start with the study of the eighteenth century. The story of Britain's working life during the previous centuries—from the time the Romans left us (440) until, in 1700, we were as a strong nation fighting to protect Europe from French tyranny—is of course interesting and important ; but it is not necessary to study it in detail to understand the growth of *modern* industrial conditions. It was another world entirely. All that is necessary is to summarize the state of things in industry and agriculture *on the eve* of the eighteenth century. With such a summary in mind it will be easy to trace and understand the epoch-making revolutions which were to follow so soon afterwards.

To make this summary is the aim of this chapter. We will survey the old systems of industry, commerce, and agriculture in turn—the three chief departments of our nation's working life.

I. INDUSTRY.—England began to be a truly industrial land in the seventeenth century only. Manufactures and trade occupations had never played a

prominent part in her life during the Middle Ages. Then, her interests were mainly agricultural. Industrial activity was confined to her few important towns, London, Norwich, Bristol, Southampton, etc. Iron mining and smelting and foundering, charcoal burning, building crafts, salt making, were her minor forms of industrial activity.

The making of cloth was, however, by far the most important part of her industry. Indeed, cloth-making was known as the "staple" industry. Profiting by the rich stores of wool yielded from sheep-farming, this trade grew so strong that it easily held its own against the rival Flemish trade.

It should be at once noted that we really owed our strength and superiority in this trade to foreigners. From time to time—e.g. in the eleventh, fourteenth, and sixteenth centuries especially—large numbers of Flemish and French weavers, fullers, and dyers took refuge in our land. Persecuted in their own countries, they brought their knowledge and skill to ours. Our kings were wise, and protected them: our industrial gain was exceedingly great. They taught us their arts and secrets, and improved our chief industry out of all knowledge. Englishmen did not like them; it was supposed that native cloth makers would be thrown out of employment. Riots occurred—one of the greatest being that of Evil May Day, 1517,—in London, when the homes and looms of the aliens were destroyed and a great number of lives were lost. Gradually, however, it became clear that the cloth industry benefited by these settlements of aliens more skilled than ourselves. Indeed, our modern reputation as the greatest and best manufacturers of textiles is built upon the trades fostered and improved so slowly through long centuries by the combined efforts of our own and our alien weavers.

The chief centres of this trade were at first London, Canterbury, Southampton, Sandwich. Later in the sixteenth and seventeenth centuries the west of England—Exeter, Taunton, Bristol; the East—Norwich, Colchester; the West Riding—Leeds, Wakefield, Halifax—tiny places all then—became centres. The “Old Drapery” of the fourteenth and fifteenth centuries, the heavy, coarse cloths, were famous for wearing qualities, and continually improved. The “New Drapery” of Elizabeth’s time (1560–1600)—fine and rich cloths and lace fabrics—reveal how greatly the skill of the industry progressed.

In the seventeenth century this trade received tremendous stimulus. Many thousands of aliens came here to escape religious persecution in the Low Countries and France. As before, they were welcomed by our kings, and hated by our people. All were highly skilled workers. So again we profited by their settlement, their knowledge, their trade secrets, and remarkable energy. The industry expanded and improved in processes and output—so far as it could *without any mechanical power to help its progress*. New branches were started, *e.g.* ribbons, sailcloth, and tapestry flourished.

Particularly also did we gain by the coming of Italian and French silk weavers. English silk, previously a poor and neglected trade, began to boom: in 1640 over 40,000 families lived by it; in Blackfriars alone, more than 1,000 looms were at work. Brocades, velvets, and all sorts of fine goods were turned out. England’s commercial gain was again enormous.

Domestic Industry.—This industry in all its branches was still at this time mainly domestic; *i.e.* it was all done *by hand, and in the cottages of the workmen*. The wool was carded, spun, and woven by the members of a family at home. There was as yet *no sort of*

factory system. The old-fashioned spinning-wheel and hand-loom were the only instruments used; no improvements had been made in these for centuries. The shuttle was passed across the loom from hand to hand; if wide cloth were made two weavers sitting side by side passed the shuttle one to the other. The finished cloth was generally bought by the "clothier" in the local market weekly: he would take it to a bigger town and there traffic in it with merchants and shop-keepers.

Thus did our "staple" industry thrive. On the eve of the eighteenth century its future was assured. Unfortunately, all the methods were old and clumsy; the conditions of work and life in the expanding trade were the same as they had been for centuries. The "revolution" in the next century, however, was to change all this.

New Trades: Alien Help.—Cloth and its allied trades did not alone profit by the influx of aliens in the seventeenth century. Thousands of these men were skilled artisans. *E.g.* Walloons taught us the art of improved dyeing. Dutch, skilled in engineering, improved our harbour works, and drained vast stretches of our miserable fenlands; waterworks were built; better drainage schemes introduced. Paper-making, printing, bookbinding, jewellery, wire, cutlery, needles, thread—all were improved by alien knowledge and labour.

Especially, however, must the cotton industry be noted—so famous to-day. The making of cotton fabrics now began, but progress was hard and slow. No "true cottons" were made till long afterwards; but their origin must be traced to this time.

To the French refugees we were indebted for watch and clock-making, glass, locks, etc.

State of other native industries in seventeenth century.
—The state of our other native industries, especially

iron-smelting and salt-making, was also improved in the seventeenth century. Not till this time, however, were any improvements made which resulted in real progress.

Since the days of the Romans we had smelted *iron* with charcoal—a very expensive method—for two loads of wood made one of charcoal, and two of charcoal were wanted for one ton of iron. Forests, heavily drawn upon, were beginning to dwindle: the enormous demand for wood fuel made iron dear and crippled trade. In this century Stavenant and Dudley first tried to smelt iron with coal. Dudley was really successful, but misfortune overtook him. Similar experiments continued till the end of the century, but no real progress could be claimed. So the iron trade remained almost stationary: it awaited a cheaper fuel with which smelting could be done.

With *salt* there was more success. Until 1670 it was made chiefly from sea water. Bristol and Southampton were the centres of the industry. Their output was never enough: large imports were made from Scotland and France. In 1670 “rock salt” was discovered in mining operations at Northwich. The mining of rock salt was henceforth a new trade. The discovery made England independent of foreign supplies.

The science of *mining* became better understood. Foreign skill again helped us. Shafts did not go very deep—twenty to twenty-five yards were the deepest. Enough iron, coal, and salt could be got without going deeper.

So for hundreds of years our few industries had slowly progressed to this condition. Except for cloth-making and the introduction of the “new” trades, there is nothing to praise. The great obstacle to advance was the *absence of machinery*. Methods and processes, hoary with age, were still in common

use. If the weaver or the artizan of the seventeenth century could have returned to the eleventh or the fourteenth century he would not have found much to surprise him, and could have "carried on" quite well, so little change had there been.

II. COMMERCE.—(a) The first need of commerce is an ample production of goods. In the seventeenth century industry was flourishing enough to provide this. So the commercial life of the nation began to expand. The merchant-class became more numerous and less exclusive. Local markets increased in number: the larger provincial markets were beginning to rise—especially in the cloth-trade. The system of exchange and barter of earlier centuries was slowly giving way to that of sale and purchase and money payment in gold and silver. The ports were growing bigger and busier—for foreign trade was increasing, especially with the New World and the East Indies. The old *Trading Companies* which had been set up to carry our trade abroad began to flourish greatly—the era of their success was beginning; this system was still believed in by our kings and government, and many new trading companies were formed. Their monopolies and commercial privileges were, according to the ideas of the time, not only profitable to themselves, but the best means to drive trade abroad and "open up" new-found land and thus benefit the nation commercially.

Money.—No sign of our modern banking system existed in this age. Men's ideas on money and its uses were very elementary. Their chief notion—to get as much as possible and hoard it—was wrong and bad for trade; but they did not know this *economic* truth. The only "banks" which existed were the chests and underground cellars of the gold and silversmiths of London. Money and jewels, etc., were deposited with these merchants—a mediae-

val custom. Not until the very close of the century do we find any fresh ideas or attempts made to set up a banking system.

(b) The second need of commerce is good *means of transport*. In the seventeenth century this was entirely missing: the expanding trade of England was thus severely handicapped.

(i) *On land*.—The only means of carriage was by road or by river. The roads were very few and indescribably bad—dangerous too in that highway men abounded. In the “new” manufacturing districts of the north and west only the roughest ways were cut and more often than not they were the merest tracks upon which the stranger was soon lost. The only form of vehicular traffic was the heavy, cumbersome, old wagon: this was slow and scanty, and, of course, used almost entirely in agricultural operations. Merchandise was mostly carried on pack-horses over the roads and tracks of manufacturing districts. These horses usually went in long trains and were in appearance like a modern convoy in a tropical land, if coolies be substituted for horses. The goods were carried in double panniers—280 lbs. to the one horse load. It was a slow, and expensive way. Private travelling was done by horseback or by coach. The coach was terribly slow and risky owing to the dangers of the bad roads. No canals existed—and river transport was, strangely enough, undeveloped except on the Thames between London and the Nore.

Thus was commerce almost crippled on land for want of good transport.

(ii) *On the sea* things were better. Ship-building had improved: ships were bigger—ocean going—and, although dependent on their sails and fair winds, were on the whole sufficient to meet the transport needs of our growing foreign trade.

Commerce, although growing so strongly was still really "local" in character. This restriction was unnatural but it resulted from—

- (a) the absence of quick means of communication.
- (b) the absence of good land transport.

Under these grave disadvantages the merchants had to do business "on the spot"—and their operations were usually confined to the district or market they were personally acquainted with. It was thus very necessary for this unnatural restriction to be broken: not, however, till late in the next century was it possible to do so.

III. AGRICULTURE.—In this sphere of work no progress had taken place. The system of farming on the eve of the eighteenth century was quite a thousand years old! The only changes to be recorded are social changes. *E.g.* slave and semi-slave labour had disappeared off the land. All men were free, and the threefold order of landlord, farmer, and farm labourer had been in existence for some hundreds of years. But there was no science of agriculture—no real attempt to improve the system of land holding, cultivation or the breeding of cattle.

(a) *The "open field" system.*—This was the ancient system of land holding and cultivation: it was still in common use. Adjacent to every hamlet, village, or rural settlement were three huge open fields. These were divided up into so many "strips"—each strip being about half an acre in area—and separated from each other by "baulks," *i.e.*, thin lines of unploughed land. To look at, the old "open field" system was very much like a huge modern allotment. Each family had its fair share of strips scattered over the three fields. In cultivating—all the men helped one another; *i.e.* all the ploughing, sowing, reaping, etc., was done together by common labour. It was the most convenient way. The

yield of each man's strips, however, belonged to himself to sell or keep as he wished.

This method of cultivation was further peculiar in that a *rotation* was followed year by year in the matter of crops. Every year *one* field was left fallow and wheat and barley grown in the other two respectively. It was known that two years produce exhausted the soil; the science of nourishing land by manuring was not yet understood; therefore, the primitive method was followed of leaving one field fallow every third year to allow nature to restore its weakened qualities. The order of crops was as follows :—

	Field 1	Field 2	Field 3
1st year	Barley	<i>Fallow</i>	Wheat
2nd „	Wheat	Barley	<i>Fallow</i>
3rd „	<i>Fallow</i>	Wheat	Barley

The bad points in this system were :—

This fallow field was great waste. Much time was lost in going from strip to strip. To drain the soil was practically impossible. Dishonest neighbours could steal land. Quarrelling was frequent. As cultivation was done commonly there was no incentive to improve either the land or the methods.

At the end of the seventeenth century only three-fifths of the arable land of England was under cultivation. A vast deal of it was in "open fields." Here and there, however, the large farm, privately owned and worked, was to be found—the forerunner of a new order of things.

The wooden plough was still used, although with the cheapening of iron it was rapidly improved. Horses, too, were beginning to displace oxen in the work of drawing it. As yet there were no root crops; winter feeding for cattle was therefore of the scantiest; nor was clover or other valuable grass crop known. The hay was always of poor quality and never very abundant.

Many farmers and thousands of "strip holders" added to their income by cloth-making in their spare time—especially evenings. Indeed, as this practice grew more widespread and the profits of agriculture grew less, the Domestic Industry came to be regarded as "the great sheet anchor" of agriculture (see p. 54).

(b) *Enclosures*.—The remaining two-fifths of the arable land in England at this time was enclosed by walls and hedges—all privately owned. These enclosures had been made by the rich and powerful during the fifteenth and sixteenth centuries.

All this land was devoted to Sheep-Farming. Vast sheep runs were thus existing: the breeding of sheep had become more and more popular with the rich classes. The object was not to improve the mutton, but to get as much wool as possible. The growing cloth trade made an immense demand for wool. Wool became extremely valuable. Sheep-farming, therefore, was a much more profitable game than agriculture. Thus the enclosing of arable land, the breaking up of the "open fields" and their conversion to sheep farms, had gone on rapidly in the past centuries. It was both good and bad for us. Good because it gave wool to the "staple" industry: bad because (a) it restricted the output of wheat; (b) it led to the rich stealing as much land as they could. In the seventeenth century the government stopped this enclosing practice. It was feared that there would not be enough wheat for the needs of the growing population.

Apart from this arable land which supplied these two industries of agriculture and sheep-farming, immense areas of England were lying waste—moorlands, downs, commons, forest, the wide trackless fens, and much arable soil. The reclaiming of this land was to be the work of the future. As we saw (p. 11), the draining of the fen lands was started about this time.

(c) *Cattle breeding*.—Except in the important occupation of sheep farming no attempt had yet been made to improve the breeding of cattle. The oxen, sheep, pigs, etc., of the ordinary farmer and strip holder were indescribably poor in quality. The lack of good grass crops, the absence of root crops, especially turnips, and their scanty winter's fare, allowed the beasts little to fatten upon. A famous description of a ram of this period is as follows: "His frame large and loose, his bones heavy: his legs long and thick, his chine, as well as his rump, as sharp as a hatchet; his skin rattling on his ribs like a skeleton covered with parchment." Cattle generally were skinny, gaunt, almost meatless, subject to disease. The best were killed and their flesh salted down. The rest were kept to breed their miserable kind. There was the clearest need that science should come to the rescue of the cattle and the work of stock-raising.

CONCLUSION.—This brief survey of the conditions existing in English industrial life about 1700 shows how slow progress had been for centuries. Only the cloth trade seemed to be alert and advancing. No one dreamt that within another hundred years so mighty a change would have taken place that both industry and agriculture would be completely transformed.

EXERCISES

- i. Describe the "open field" system of Agriculture.
- ii. Discuss the question of "alien labour" in the seventeenth century.
- iii. How was Commerce checked in this period?
- iv. What is an Enclosure? Was it good or bad in its effect on English life?
- * v. What was a Trading Company? Consider its value (a) commercially; (b) politically.
- *vi. What is a "staple" industry? Cf. Wool in the Middle Ages with Coal to-day in this connection.

CHAPTER III

THE INDUSTRIAL "REVOLUTION"

REVOLUTION AND REFORM.—To understand this great event in the history of not only Great Britain but of the whole world—its economic effects are to be seen everywhere to-day—it is first of all necessary to understand what is meant by a "revolution."

In its widest sense "revolution" means a complete change from one system to another. It is an absolute "over-turn" of existing arrangements, methods, institutions, or any ordered and accepted form of life, and the creation and institution of some *new* and acceptable form of order, or system, in the place of the old. Its importance lies not so much in its success—for some "revolutions" have failed in their purpose—but in the full sweep it makes and its absolute nature. This will be easily seen if the word "reform" is considered side by side with "revolution."

Reform, also, means a change in the existing order of things; but a reform whether small or large does not destroy the complete existing system: it only substitutes for one part of it a new part which is considered to be an improvement. Moreover, a reform generally comes slowly; it is always a well discussed and much debated matter: swift and strong, however, is the march of a revolution; usually it is upon men before they are ready for it or can escape its assault.

The method of reform for the purpose of improving

things is generally favoured by men ; its slow and decided movement results usefully in effective and lasting work : further, by the passing of a whole series of reforms a new system of things can be gradually substituted for an old one, and thus *the purpose of a "revolution" can be gained by "reform"*—if only sufficient skill and patience can be brought to bear on the "real issue at stake" by the men or the nation concerned.

These thoughts will perhaps make plain to you the meaning of the phrase "Reform or Revolution." This phrase is frequently met in reading *modern* social, political, and economic history. It agitated Great Britain much in the nineteenth century. A new state of things was then wanted : only by reform or by revolution could it be brought about. And the wonderful series of great reforms passed during the nineteenth century, show the skill and patience of our statesmen and our forefathers : the new order of life we ourselves enjoy is the finest memorial to their prudence.

POLITICAL REVOLUTION.—Revolution is usually associated with the political world. In history, the record of such an event is common. The government of any particular country is no longer respected or obeyed. It is attacked and destroyed, and a new form or "constitution" is set up. Sometimes the "new form" does not satisfy the nation : in its turn it is also destroyed and another substituted. Thus is the progress of political revolution always marked with the ruins of previous systems of Law and Government.

In the age we are now dealing with three such revolutions occurred. They are well-known events in history, simply because they were so big in themselves and so important in their consequences. The first was the English Revolution of 1688. In that year

the Stuart King, James II, and his government were expelled, and a new government established under the monarchs William and Mary. This great change was successful and endured. Since then nothing of the sort has happened in our own land. The second resulted from the War of American Independence, 1775-1782. Our American colonies (except Canada) then revolted from our rule, and succeeded in establishing their political independence in accordance with their historic Declaration of American Independence, July 4th, 1776. This revolution has also proved to be good and enduring. The present United States of America is the world famous state which has grown directly from it. The third is, perhaps, the best known of all—the French Revolution, 1789. Then were both the existing government and social order in France completely overturned and new systems created. Although ruthless and absolute in its nature, this revolution cannot be said to have been successful, for France, as all must know, has been subjected to other revolutions since then.

THE INDUSTRIAL REVOLUTION.—The reason I have emphasised this political type of revolution is that the English *Industrial Revolution* we are now going to deal with, is so different to it both in its nature and its consequences. In the first place, it was confined to industry and had no direct relation to politics. In the second, it did not destroy industry and create a new one, in the common revolutionary sense: it stimulated and developed industry to unheard of dimensions. In the third, it did not come suddenly as some great flood sweeping all before it; its coming was known to and watched by all concerned: its progress was slow—too slow indeed—and its stages of achievement were such that men could quickly define and understand them and make accordingly their own preparations and changes in industrial

life and order, so as to be able to receive and profit by them. Note, however, that its progress although slow was too strong to be resisted. Its *force* was truly revolutionary. There was no possibility of stopping it—remember this. Yet, its pace, fortunately, was slow enough for men to accommodate it—with the best of results.

What was it? Simply the substitution of *machine-power* for *hand* or *human-power* in many of the processes of industry; the adaptation of mechanical and scientific device and invention to manufacture and mining. This was the heart of the matter.

During this century machinery in its modern sense was born. It was a healthy babe. It grew quickly and became exceedingly strong: to-day, as we know, it has attained its splendid manhood. A mighty giant, machinery is our obedient slave. At our will, it labours with tireless and inexhaustible strength, and has made our world rich beyond the dreams of ages.

Engineering and scientific genius seemed to rise suddenly in our midst during this century. The secrets of harnessing natural motive forces to mechanical devices for purposes of industry were suddenly revealed to men. It was an age of marvellous invention. And in many instances the inventors were humble artizans who earned their bread by their *hand-power*. The outstanding inventions—those which began the “revolution” in industry, will be described in the next chapter. Here, it is necessary to note, that once started this flow of inventive genius or force continued, and ever increased in volume, until machinery and scientific method had not only mastered the processes of industry, but were considered indispensable to them. By the end of the eighteenth century machinery was invented or adapted for most industries. The Industrial Revolution had arrived.

To grip the importance of this vast change, it is first of all necessary to recall that until machinery made its appearance, hand-power was the only power capable of labour. This was pointed out in the last chapter. Although, as we saw, our industries were on the whole advancing—especially the textile industry—yet necessarily their output was restricted to the quantity that human labour-power could produce. With the help of machinery—machinery that was constantly improved—and of science applied to industrial methods, production became both quicker and greater. The economic advantages of this were enormous. Moreover, it clearly caused the various systems and organizations of the industrial world to *change*: the change came slowly at first—then rapidly—until *new systems and organizations had displaced the old*. In this complete change sufficient reason is found by historians to name it the Industrial Revolution.

OTHER REVOLUTIONS.—This complete change in industrial processes and organization brought about other changes equally important. You must note these if you would fully understand this revolution. Indeed, you may think of this industrial revolution as the parent of other revolutions—all of which in themselves witnessed to its strength and far reaching influence on the working life of our nation.

Firstly, it was directly responsible for the quick growth and development of our *modern* state of society looked at from the industrial and economic point of view—the state called *Capitalism*. The present capitalistic organization of society is wholly different from the economic organization of society before the advent of machinery.

Secondly, the *Trade Policy* of Great Britain was entirely changed during this century, and as a result of the changes in industry. What was known as

Mercantilism—*i.e.*, the old policy—was given up in favour of a wholly new one—called *Laissez Faire* or *Individualism*. Such an “over-turn” in trade policy had results of inestimable importance.

Thirdly, an *Agrarian Revolution* followed swiftly on the heels of the changes in and reorganization of industrial life. That is—an entirely new system of agriculture and of holding land took the place of the old system we glanced at in the last chapter.

Lastly, these mighty movements all combined to produce extraordinary changes in the conditions of *social life*. In fact they have produced our modern form of social life. Most of the mediaeval social order and system of life within our State was swept away utterly in consequence of these supreme events in the eighteenth century.

These other “revolutions” will each be more fully explained in later chapters of this book. Reference is made to them now to emphasise *the vast scope of the industrial revolution*. It affected the whole course of our national life so profoundly that it is not too much to say it did, in the end, completely change it. It is, therefore, not wise to set apart the revolution in the processes of manufacture as one complete fact to be looked at alone; it must be viewed especially as the chief of many big movements *all progressing at the same time* to their revolutionary goal of a “new state of things.” These immense processes of *change* cannot really be separated from one another. All the same the *change in industry*, consequent upon the invention and adaptation of machinery to trade, must be accepted as the basic or parent movement in this period of social and industrial unrest and transition. From the purely economic point of view the other revolutionary movements had to depend upon it.

THE REASON WHY?—Enough has now been said

to justify the statement that England "awoke in the eighteenth century from her mediaeval slumber." Awakened, refreshed, and newly equipped, she set out upon her high and dangerous quest of Empire and World Trade. And the real source of all her new strength lay in the amazing economic wealth which the industrial revolution suddenly brought her.

To the curious the following questions will now arise: Why did this all-important revolution come at this particular period? Why did this needed inventive and mechanical genius sleep so long? The natural motive powers of water, wind, and steam were known before—why did not the need of men drive them to use them scientifically in industry centuries before the eighteenth?

It is very difficult to give a satisfactory answer to such questions. The "why?" of anything is always the hardest part of it. Generally, however, the reply must follow the line struck in the last question: that until the eighteenth century men *did not really need to seek mechanical aid in their industries*. The immensity and complexity of the modern world make us easily forget how simple and "small" the world was before the eighteenth century: *e.g.*, the population of England and Wales was very low then: in 1700 it was 5,475,000; in 1801 it was only 8,892,536. (The first official census was taken in this year.) Our resources were practically sufficient for our own needs. Like almost every other State then known, we were able to live satisfactorily on what we had. Our growing industries—the textile especially—which produced a surplus, enabled us to carry on our small foreign trade successfully. We were essentially a "domestic" people: our population was mostly agricultural. Life was very restricted but very contented. The spirit of adven-

ture, the passion for possession, the call of the great unknown world, had not yet stirred our national character to the degree necessary to drive us in whole-hearted pursuit of the rich colonial and imperial prize that lay waiting for a dominant nation.

This "call" came in the eighteenth century. We followed it at once, and almost immediately became saddled with big colonial responsibilities. This century saw the "expansion of England" all over the globe: the foundations of our Empire firmly laid. The French, Dutch, Spanish, Portuguese in turn (sometimes together) tried to check our progress. Spurred on by their rivalry we proved that the race for the possession of India, Canada, America, Australasia, and South Africa, went to "the swift and the strong." In the short space of a hundred years we became the first in wealth and power among the nations of the civilized world. It was a century of wars—a century of national success. Historians name these wars "trade wars." They say we fought for the trade of the new discovered and settled parts of the world. This is true, but—here is the point from which we started—*could we have maintained and controlled this vast, new, and increasing sphere of commerce* if our industries had remained in their seventeenth century condition?—if there had been no mighty change in the whole system and organization of industry and manufacture, etc., as that known as The Industrial Revolution?

That the "expansion of England" and this economic movement at home went on almost at *the same time*—side by side, as it were—helping and supplementing one another in creating an entirely new order of things for Great Britain—is an interesting and remarkable fact: it certainly suggests that the *need* of greater industrial activity and production, —the *need* of machinery in industry—the *need* of

the scientific use of motive power—the *need* of recasting the existing system of manufacturing to cope with the new and vast demands—was made so clear to all concerned that full and tireless efforts had to be made (and were) to satisfy the unprecedented necessity. "Necessity is the mother of invention."

In trying, therefore, to account for the strange outburst of engineering and industrial genius in the eighteenth century, it is well to remember the political history of the time and to understand how urgently Great Britain stood in need of it. To "run" the "new world" on the lines of the "old" was impossible.

Another interesting fact about this revolution is the period it took to achieve its purpose. It has already been pointed out that its rate of movement was slow. It was, however, so enormous an event that it had to move slowly. Different estimates are given of its duration. The fairest is—that it took one hundred years, *i.e.*, from about 1750 when the discovery was made that smelting could be done by coal and coke, and the first improvements in the earliest crude steam engines were being made, until about 1840–60, when the first great railway and transit systems were projected in Great Britain. An extraordinary long time for a "revolution" to take! Yes—and for this reason many writers prefer to speak of it merely as a period of "movement" or "development" of industry. Yet, when its work was done, the change it had caused was so complete, no matter from which side it was considered, that the term "revolution" alone can give any full idea of it.

Lastly, it ought to be remembered that this revolution was a British event. The grand inventive genius and organizing skill it provoked and nurtured

were British. The inventions and discoveries mentioned in the following chapter ushered in the "Age of Machinery"—they began a movement which was quickly to transform and revolutionize the industry of the world—but they were British. It is necessary to emphasise this fact because the fruits of this revolution were exceedingly good and abundant. Other nations—our trade rivals—were not slow to try and gather some. In various ways they succeeded. British industrial processes and organizations became the envy of all ambitious states, and the models for them to follow in the transformation of their own industries. Thus were they copied and imitated (and improved?) by alien people throughout the world—until, late in the nineteenth century, "our industrial revolution had conquered the civilized world."

Lose no chance of reading about this wonderful event or of studying it and its effects on the modern world. It is fundamental in its importance—and is the foundation of all modern economics. In itself it stands as one of the marvellous achievements of the British race.

EXERCISES

- *1. Which is preferable as a means of progress—*Reform* or *Revolution*?
2. State the differences between a political and an industrial Revolution.
3. Supposing this Revolution had never occurred—describe what you would conceive to be modern industrial conditions.
4. "The Industrial Revolution was a prime necessity." Discuss.
- *5. What is meant by "The Expansion of England"? Name some chief events in this movement during this century.
- *6. Is it true that "Trade follows the Flag"? If so, does it justify war?

CHAPTER IV

THE CHIEF INVENTIONS OF THE AGE : THE COMING OF MACHINERY AND POWER

THE eighteenth century is famous as an age in which mechanical inventions were first applied to industry. Till then, as we have seen, all manufacturing processes were done *by hand*. If the volume of production was to be increased, machinery and power were essential. Our increasing trade demanded a larger output. Commercial necessity, therefore, drove men to think in terms of machinery. The result was the birth of that rich British mechanical genius which produced invention after invention, machine after machine, until our trade processes were revolutionized by being machine-driven.

The chief of these inventions will be described in this chapter.

I. TEXTILE TRADES.—It was only natural that our “staple” industry, cloth-making, should have been the first to profit by machine processes. Until the coming of machinery and power, this industry was mostly “domestic.” Its spinning, weaving, dyeing, was all done by hand. In thousands of cottages the women and girls spun the wool into threads, while the men wove it on the hand-loom into cloth. This process of hand weaving was slow; but spinning was slower. One man could easily weave in an evening all the wool spun by his family during the day. The only way to increase speed was to employ more “hands.” All this was

changed by the coming of machines and power to drive them, the speed and the accuracy of which increased output beyond knowledge and resulted in the creation of our giant modern textile industries.

The flying-shuttle.—In 1733, Kay of Bury invented his “fly-shuttle.” This was a contrivance by which the weaver’s shuttle, which carries the weft through the threads of the warp on the loom, was mechanically driven. When perfected, and in use, it abolished hand weaving. It worked more swiftly: it allowed wider cloth to be made. Hitherto “single width” was the width one man could manage: “double width” was woven by two men working side by side and passing on the shuttle one to the other. The speed of weaving was so much quickened that there was now positive need to quicken the old processes of spinning. Toil as hard as they could the hand spinners could not produce enough yarn to satisfy the greedy “fly-shuttle.”

Next, therefore, have to be noted three inventions which followed hard on one another—and which completely transformed the old method of spinning.

(i) *The spinning Jenny.*—In 1764 James Hargreaves, a hand-loom worker of Blackburn, constructed the famous “spinning jenny.” This provided for eight spindles to work in a row. This was speedily improved until the eight were increased to many. So simple was the machine to handle that even children could work it. It increased the output of yarn enormously.

(ii) *The water-frame.*—Richard Arkwright’s “water frame” was made soon afterwards. This machine was driven by water power. The thread was spun by rollers revolving at different speeds. After improvements it turned out stronger and smoother thread than the “jenny”—thread very valuable in that it allowed the weaving at last of true cotton fabrics.

(iii) *The mule*.—Crompton's mule. This was an advance on the two previous machines. It spun a much finer thread—thread which was used for the weaving of muslins and similar fine materials.

Cartwright's power-loom.—Thus assisted, spinning was now well able to keep the pace with "fly-shuttle" weaving. Indeed, with this quick development of spinning it was necessary to improve on the new process of weaving—for the loom was still worked by hand. A "power-loom" was wanted, *i.e.*, a machine that would weave. This appeared in 1789—the invention of Cartwright. So rapidly was this improved that in 1791 a Manchester firm ordered 400 of them. Other inventors were busy on the same lines. Experiments continued without end. By 1815 the "power-loom" was a very efficient machine and was coming rapidly into general use. It was driven by *steam* power. This machine's speed allowed weaving to overtake and maintain the industrial pace with the mechanical processes of spinning.

Combing and Carding.—Machines for combing and carding wool—a hard, slow, wearisome task for hand labour—were also brought out. In every department of this industry invention began to develop new processes.

Other Inventions.—It was an age of mechanical experiment and achievement. Only a few examples can here be given. Bell introduced the printing of calico by cylinder. Heathcoat staggered men and allowed the Nottingham lace trade to make its fortune by his marvellous lace machinery. Murray's machines for spinning flax commenced the mechanical revolution in the linen trade. Gott and many others toiled successfully in adapting the new machinery in the woollen trades to the needs of cotton. Thus, it came about, that under the ever-increasing stimulus of machine speed and power our old "staple" in-

dustry, cloth-making, was gradually transformed into the textile industry, *i.e.*, it split up into numerous allied trades.

II. MOTIVE POWER.—This was the next problem. Machines need a stronger motive power than human agency. Of the various forms of motive power known to and used by us to-day—human, beast, water, wind, steam, gas, electricity, only the first four were then known. The discovery of the last three have made modern machinery possible.

The *Steam Engine* first appears in this amazing century. Rapidly developed, it proved an invention more important and powerful than all others to transform industrial processes. It gave the new machinery what it mostly needed—*strong driving power*.

At first the new machines were driven by hand, or beast. Cartwright's first loom was worked by a bull. Water was also employed. The swift torrents and rivers of the north country were "harnessed" to the "power-loom," and the new "factories" began to rise on the banks (see p. 40). The use of steam, later, displaced water as the chief motive power. Not so cheap, it was stronger and more easily controlled.

James Watt.—Experiments in steam engines had begun in the early part of the eighteenth century. Newcomen and Smeaton both deserve mention in this connection: their success was small, but they paved the way for the genius of James Watt, a Glasgow instrument maker, to produce a practical machine (1763). He first solved the problem of the up and down piston action, and by introducing a separate condenser reduced the loss of heat. To his partner Boulton he was deeply indebted. The accurate work of this skilled artificer alone made his success possible. In his way, Boulton was also a

genius. He had the right idea—that “power” was the absolute need industrially of this age of mechanical invention. He is reported to have said to George III, who asked him what he sold, “I sell, Sire, what all the world desires—POWER.”

The new power—*steam*—drew widespread attention. Soon the industrial and the mechanical worlds were clamouring for it. In 1781 Boulton wrote to Watt, “The people of Manchester are all steam-mill mad.” Watt’s engines were soon being set up in every factory. Steam power had arrived. Its future was assured. An increasing number of first-class brains devoted their ability to solving its problems. Improvement followed improvement in the processes of using it.

III. COAL AND IRON.—Returning to these old English industries we find they, too, make a vast advance in this century. The introduction of the steam engine set up an enormous demand for fuel. Wood was scarce: so the value of coal was quickly understood. Coal mining expanded its operations and engineering genius was naturally drawn to the problems of mining.

Smelting.—More important than this, however, was the complete change brought about by the discovery at last of methods by which iron could be smelted with coal fuel. As we saw (p. 12), until this age iron was smelted with charcoal—a wasteful and expensive process. Our forests were disappearing as a consequence. Nor were we able to smelt enough iron for our needs: we imported big quantities yearly. Now, however, driven by the spirit of the times, many iron founders applied themselves to this problem of cheaper smelting. Dudley, Darby (father and son), Roebuck of Carron, Wilkinson of Bersham, all grappled with it. At length the new process of smelting iron with coal fuel was discovered.

The chief difficulty these experimenters had to face was the weak blast. With the help of the steam engine this was overcome. Thus introduced into the iron trade, steam stayed and played an ever-increasingly important part. The results of this discovery were gigantic. Iron and coal fields lay handy together in the north. Both industries forged ahead—the one helping the other. Soon England ceased to import iron. Rather did she begin to export it. 300 tons a year was all her produce in the old charcoal days; this rose at once to 1,500; in 1815 we were *exporting* over 90,000 tons.

Puddling.—These discoveries led to others of first rate value, *e.g.*, Cort discovered the process of “puddling,” and how by using rollers instead of hammers iron could be shaped and consolidated. Wrought iron in consequence became cheaper. South Wales became a great iron-coal centre. Here, giant workshops arose: blast furnaces were built: the iron trade boomed. Production increased apace; at one iron-works alone, Cyfartha, 200 tons a week were produced.

Increase of trade.—The demand for iron became universal. Machinery of all kinds now required it. Bridges, ships, even houses were built of it. The age went “iron-mad.” The demand for coal was equally enormous. In 1700 our coal output per year was 2,500,000 tons. In 1750 it was doubled. In 1780 it was 6,500,000 tons. So the twin industries which have made Britain so rich and powerful were born anew—and rapidly growing in strength soon displaced the ever-increasing textiles from their honoured place of the chief industry.

IV. CHINA AND EARTHENWARE.—Although compelled to consider rather fully the giant industries which arose as a result of these inventions, we must yet spare a line or two to note that many another

trade was begun and pursued a flourishing career during this century of amazing industrial progress. Nothing seemed to escape the eye of the inventor. The best example of this is the Porcelain industry. The "china clay" from which it is made was discovered in Cornwall. It had previously been imported at high cost. Porcelain manufacture was revived: the duller trade of earthenware received fresh vigour. Mechanical improvements were introduced: processes bettered by skill. Finally, the industry was revolutionized by the genius of Josiah Wedgwood. In Derby, Worcester, Etruria and elsewhere this pottery work thrived, and was, for a time, the envy of Europe.

V. CHEMICAL PROCESSES.—In these also rapid progress is seen. The discovery of chlorine gas, for example, changed the method of bleaching so absolutely that a few days was the time now spent instead of six months bleaching in the open! Dyeing was improved. And the introduction of Turkey-red in Scotland provided one of the wonders of the age.

VI. ROADS: TRANSPORT.—The importance of transport and easy communications has already been pointed out. Was the eighteenth century commercially and industrially handicapped by bad roads and poor transport as was the seventeenth? Or, did the mechanical genius of the age contrive a new and improved system? Such a new system was essential.

(a) *Roads*.—These remained bad. At the end of the century a famous man, Arthur Young, said that only four good roads existed. He writes of ruts four feet deep and of thirty to forty horses required to drag out wagons sunk in mire. Turnpikes there were, but the roads were not kept in repair. The "flying" coach drove at six miles an hour. Better means of conveyance were in store: but they came

slowly. Towards the end of the century a group of road-engineers arose—Smeaton and Rennie, famous as bridge builders, Telford and MacAdam, road builders. The latter two introduced the modern science of road making. From their time “macadamized” roads have spread to all parts of the land, and proven satisfactory to all but the heaviest roads. MacAdam’s system reinforced with tar is still used by us.

(b) *Transport*.—This remained deplorably poor. Packhorse trains still did most of the commercial carrying. Besides the loss of time and the risk this old-fashioned method involved, it was excessively expensive. *E.g.*, coal carried in panniers on horseback cost two pounds to send from Liverpool to Manchester. The heavy wagons were still the only other means. Scarcely any improvement had been made in their construction. This means was also too slow and too dear. Thirty pounds a ton was a common rate.

The historical puzzle is: how did our trade and commercial activity expand so vigorously in this century with practically no transport system to help it? Product had to be carried—and fairly quickly. How was it done? History gives no satisfactory answer.

(c) *Canals*.—Had not that wonderful man James Brindley arisen towards the end of the century and come to the rescue, our commerce must assuredly have been cramped to death or bankruptcy. As roads were worthless and transport wholly insufficient, and carriage rates impossibly high, Brindley conceived the idea of making use of our splendid rivers and of assisting them by constructing a huge network of canals. Transport by water was his solution of this supreme difficulty. How well he succeeded is too long a story to tell. Loyally sup-

ported by his patron, the Duke of Bridgwater, when most people thought him insane, he spent his life in the execution of his grand schemes. His work convinced the industrial world—especially when it was shown that the cost of transport by water was half that by land routes, and much safer. The notion of canals was then eagerly taken up. Indeed, in a short time the commercial world went “canal-mad.” There could not be enough canals. In these waterways lay the salvation of commerce. Between 1790 and 1794 no less than eighty-nine Canal Acts were passed in Parliament. By canal the main centres of trade and industry were linked up. The Grand Trunk Canal ran right through the middle of England. The great towns of Bristol, Hull, and Liverpool were connected with the Rivers Severn, Trent, and Mersey. River traffic rapidly increased. Within fifty years, 1790–1840, England was covered with canals—and the transport question was solved.

EXERCISES

- *1. What is motive power? Discuss its value.
2. What industries profited most by invention in this age?
- *3. Discuss the transport problem of the eighteenth century.
4. Discuss the place of machinery in *modern* industry.
5. The economic value of rivers.
- *6. If you are interested in engineering, whose work do you consider the more valuable—Watt’s or Brindley’s?
- *7. In view of the “political” and “national” stimulus of this age, do you think its scientific genius was a “natural” or an “artificial” product?

CHAPTER V

THE BIRTH AND GROWTH OF THE FACTORY SYSTEM

THE "factory" or the "mill" is so familiar to all engaged in the modern industrial world that it requires a definite mental effort to realize that these huge hives of industrial activity, together with the whole system and organization of manufacture they represent, did not exist in England before the eighteenth century.

The beginning of this factory system, its acceptance by employers as a desirable new method of production, its quick growth and the widespread and violent economic changes its full operations caused—form one of the most important and interesting chapters in modern industrial history. Knowledge on this subject also throws light upon many big questions in modern economics. *E.g.*, If you would learn something about the origin of *Capitalism*, as an economic state of society, read carefully this chapter on the early factory system.

DOMESTIC INDUSTRY.—The introduction of machinery was more than anything else responsible for the origin of the factory. Before this epoch-making change our industries were "domestic," *i.e.*, they were for the most part carried on in the cottages of the workers. Especially was this the case in the woollen trades. As we saw, many thousands of agricultural labourers' families added to the meagre living they got from the "land," by "carding," "spinning," "weaving," "dyeing," etc., in their

spare time at home. Indeed this "domestic" or "cottage" industry was the chief feature of English industrial organization until the latter half of the eighteenth century. An interesting description of this state of things is given by Daniel Defoe, the author of *Robinson Crusoe*. Having toured the kingdom in the early eighteenth century, he wrote an account of what he had seen. The following is an extract from his description of the woollen industry in Yorkshire. "The houses are full of lusty fellows: some at the dye-vat, some at the looms, others dressing the cloths; the women and children carding and spinning; being all employed from the youngest to the oldest. . . . Not a beggar to be seen, nor an idle person." Clearly, this was the only system capable of extensive use when *hand-power* was the only labour-power available for these trades.

The factory system destroyed this "domestic" system. The creation and full establishment of this new system was effected in three stages. The first stage of its development was the gathering of several workers into one cottage to work for and under the supervision of a master-man. This was such a natural thing for an enterprising man to contrive—especially when trade was good—that no one can be surprised at it. Thus even in the seventeenth century examples of such "domestic" *factories* are found. Several looms are set up in one house: the workers are employed "whole time": they cease their agricultural labours and become artisans. The success of the experiment encourages the master-man to "move" his "factory" into a larger building—say, a barn or a store-house. His business is gradually enlarged by the addition of more looms: more workers are employed, and so on. Thus does the factory system humbly begin as a natural improvement on the "cottage industry." Note, however, that it

means the loss by the "artisans" of their old independence, and the rise of a real employing class in the textile industry.

As the eighteenth century advanced these first experiments in factory organization were common in the big towns—*e.g.*, London, Norwich, Bristol. In country districts too they were tried: *e.g.*, at Bridgwater, Frome, and Barnstaple, historic remains still exist—in one case revealing the interesting fact that one hundred looms were assembled in one "domestic workshop."

Water This system of organizing hand-power labour would undoubtedly have gone on expanding in accordance with the initiative of the new employing class. But it would have been very slow. *Machine-power*, however, arrived. As a matter of course its presence rapidly increased the growth and development of this elementary form of the factory. It also effected a mighty change—a geographical change—in the situation and location of the factories and their industries. This brings us to the second stage.

WATER-POWER FACTORIES.—Machinery needs power. The first power used to drive the engines was fast running water. Especially in the textile industry was this exploited. Now swift-flowing water is only found in hilly country. To the north, therefore, this industry was quickly transferred. By the side of the "becks" and rivulets in the hills of Lancashire and Yorkshire there sprang into existence the new factory system. Far from towns and set in the midst of wild and beautiful country, these grim buildings of toil nevertheless attracted the textile workers from all parts of the land. Working settlements quickly grew up around these "mills." It was a sensational growth of industry in the midst of Nature.

Within the mills the organization of both machinery

and men proceeded apace. Processes began to increase in number and in difficulty. Work began to be "divided" until no worker was responsible for more than a "function" or the performance of a "part" in the full act of manufacture. The workers were engaged for their "whole time." They depended on their "job" at the mill for their livelihood. Instead of being a subsidiary means of earning money, regular employment in the textile trade was now their only means. They worked for an agreed wage, and had no further responsibilities. Thus did the modern wage-system arise naturally from the institution of the Factory System.

The basis on which this new form of industrial method and organization rested was *machinery* driven by the torrent rushing alongside the mill's walls. Fortunately, there was no likelihood of the flow ceasing—or, for the matter of that, the failure of inventive genius to improve the water-power machines. So this form of the factory system grew swiftly. There was "big money" in it. The textile trade began to boom. The north of England had started its marvellous industrial life.

STEAM-POWER FACTORIES.—But in its turn the water-power mill was doomed. A mighty rival was quick to appear and challenge its industrial supremacy. The challenge was taken up; but the mighty rival—the *steam-power* factory—destroyed its foe.

The steam engine, after much experiment had been lavished on it, was made a really efficient industrial force by Watt and Boulton. During the last thirty years of the eighteenth century it captured the greater part of English industry and revolutionized its processes—and, as a result, made the fortune of our island. The steam-engine, however, demanded coal fuel. The discovery of the rich coal-fields and iron-

fields in the north, the midlands, and South Wales, and the improved science of mining, fortunately happened about this time. There was no lack of the necessary fuel; it could be had cheaply so long as it had not to be carried far from the coal-fields.

In every way steam proved superior to water-power as a motive force. Its force could be controlled: it was constant: it was not so wasteful or so clumsy. Naturally, therefore, water-power was forsaken for *steam*: and the banks of the foaming "beck" and angry torrent in the northern hills were abandoned for the neighbourhood of the iron and coal-fields.

This was the third stage of the factory's progress. In the coal and iron districts this institution found its final resting place. In hundreds its various types arose in the north, in the Midlands, and in South Wales. All were equipped with steam engines. Writing in 1781 Boulton said "The people in London and Manchester are all steam-mill mad." The vast centres and areas of industrial activity we know so well to-day then began their prosperous work. Most of the great manufacturing towns, such as Huddersfield, Leeds, Halifax, Blackburn, Birmingham, Merthyr Tydfil, etc., then started their modern career. Indeed, around every mill feverish human activity was witnessed: rough settlements were made; swiftly they grew into towns: unknown and peaceful villages were suddenly swept into this maelstrom of energy and shared the same fate—or honour. Ugly, dirty, overcrowded, insanitary and smoke-fouled, these new towns continued to grow—forgetful of their human woe in their ever-increasing output of energy and wealth.

The noise of industry's rude intrusion into the hills gradually stopped. After the departure of mill-owners and mill "hands" and their families—all

hurried away to the new industrial grounds—the peace of Nature returned to these lonely recesses which had accommodated the factory in its second stage. Only the untenanted mills or their gaunt ruins remained firm on the rocky banks as witnesses of its failure.¹

The noise of industry also ceased in other parts of England—and this is more important. It was a time of hardship, of violent change, of quick fortunes and unexpected losses. The old system of industrial life was being “scrapped:” a new one created. The success of the steam-power factory, the necessity of building it in the coal-field regions, the entirely new organization of industry and trade resulting from its success drew all the unemployed and casual labour power to the three new centres of the North, the Midlands, South Wales. Moreover, a vast displacement of old manufactures occurs. The vigorous and flourishing textile (especially cotton) trade in the eastern counties with its centre at Norwich, and in the south-west district with its centre at Bristol, began to decay.² These districts had no “becks” or “torrents”; neither had they yet discovered coal and iron. Thus was their system still organized on “domestic” lines—and at the best could only provide factories of the first type. It is no wonder then that they quickly lose ground. They were beaten in the competitive struggle by the more efficient and highly organized North. Their labour power was drawn to the new centres. “Domestic” industry in rural parts also rapidly disappears for

¹ Many of these remains exist to-day in the north.

² Domestic industry lasted longest in the woollen trade. Wool spinning and weaving was carried on in rural districts until 1800. The new inventions did not affect this industry until then—and it escaped the first factory organization. After 1800, however, machine processes for this trade were contrived. It could not hope to escape the factory system after this.

the same reason. All eyes are turned to the new treasure grounds.

Until this time the North had been poor, neglected, held in contempt. Now all was changed. Rapidly did it advance in every direction until it was densely populated, rich beyond compare, vigorous in pursuit of industrial efficiency and enterprise, dominant in political power and influence. In so vast a transformation as this can best be seen the meaning of industrial revolution.

The internal organization of the steam-power factory shows a big advance on the water-power. The assembly of machines and men, women and children, within its walls was much larger. The process of "division of labour" was more scientifically arranged. The constant improvement in machinery caused frequent changes and experiments in the new system of "wage employment." Also, the permanent success of the factory system made permanent the division between the artisan and the employer. Again—and these were grave facts for that period to consider—it was proven that *hand-power* was beaten in competition with machinery, and in the new mode of industrial organization in the factory system the workers were controlled and disciplined in a way never before experienced.

In Chapter VIII, a description of the social and industrial conditions of life resulting from this "revolution" will be found. Much is said there about factory life. At this point, therefore, we can leave the factory. We have traced its rise through its three stages, and have seen it firmly established as the characteristic institution of the new industrial age. Its creation was the work of (i) natural business enterprise stimulated by increasing business; (ii) the perfection of power-driven machinery as an industrial force,

IRON AND COAL.—Side by side with the widespread shifting of our working (textile) population caused by the new factory system, similar movements took place in the iron and coal industries. These must be noted at this point; for together these three movements make up the full revolutionary change in our national working life at this time.

As we saw in the last chapter the iron trade languished until about 1750. The centres of its activity were Sussex, Kent, and Hampshire, where the immense forests offered ready facilities to the charcoal burners. Not being able to produce enough pig-iron for our own use, we had to import over 49,000 tons annually from Russia and Sweden. The secret of smelting iron with coal and coke, however, was now discovered. The knowledge caused revolution in the trade. Naturally, iron founders left the woodlands of the south country and started their industry afresh in the iron and coal areas already mentioned. The mining of iron ore and of coal proceeded apace. Hundreds of blast furnaces arose in the neighbouring districts of the mines. Great foundries and enormous workshops were built—exceeding by far the largest of their types ever known in the old woodland haunts of Sussex.

In this re-organization, too, the principles of the new factory system were accepted and followed by the masters. Many workmen were assembled in one workshop: their work became more and more “divided”: they were wage employees. Around the furnaces and workshops there sprang into existence “mushroom” towns: all the squalor, all the fierce energy, all the industrial success of the new settlements of men necessitated by the “factorization” of the textile trades are also to be found in these new centres of the transformed iron and hardware industries. The iron and coal districts ceased

to be agricultural: they were quickly changed into ever-widening spheres of industrial action and settlements of teeming millions of workers. *E.g.* "The Black Country" *leapt* into existence.

As coal was now the essential fuel for both *the* textile and the iron trades, coal mining proved as wealthy a speculation as any other. The coal-fields absorbed all the labour they could get and loudly cried for more. In this industry it was impossible to adopt the principles of "factory" organization. The old system of mining at "piece rates" was merely expanded to suit the vast increase in the numbers employed in the mines. The conditions of life and work on the coal-fields were also indescribably sordid. The quicker the expansion of the industry, the worse they became.

In concluding this chapter a few figures will be helpful in proving how enormous were the strides our chief industries made in this period—chiefly as the result of the re-organization of labour and the improvement of trade processes brought about by the factory system and the other forces of mechanical and mining discoveries already dealt with.

From 1771 to 1775 we imported cotton-wool to the average weight of 4,764,589 lbs. In 1800 we imported from India, the Bahamas, and America, no less than 56,010,732 lbs. In 1815 over 100,000,000 lbs.

In 1750 we imported over 49,000 tons of pig-iron. In 1788 we had ceased importing, and we produced in that year 125,000 tons. In 1815 we *exported* 91,000 tons.

In 1700 we raised 2,500,000 tons of coal. In 1780 it was 6,500,000: in 1800 nearly 12,000,000.

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EXERCISES

1. Discuss the causes of the rise of the Factory System.
2. How did this giant re-organization of industry affect our old industries ?
3. What is meant by a "mushroom" town ?
4. Draw maps of the North, the "Black Country," South Wales, and South Scotland, and mark the chief industrial towns.
5. What do you suppose would be the fate of the agricultural labourer after the decay of "Domestic Industry" ?
- *6. "Coals were England's black diamonds." Explain.

CHAPTER VI

THE "REVOLUTION" OF AGRICULTURE

THE startling economic facts that our population, more than doubled its numbers, and that a host of new manufacturing towns had sprung into existence during this period, seem to be accounted for satisfactorily by the irresistible movement of the *Industrial Revolution*. But this prolonged event cannot claim all the credit. Another "revolution" was taking place at the same time all over England. This was the *Agrarian Revolution* or the complete "over-turn" of our ancient system of agriculture in favour of a new.

That this widespread movement was in a large part caused by the mighty industrial change going on is undoubtedly true; but, as we saw in Chapter II., the dissatisfaction with our agricultural system was centuries old, and the need of reform had at least been known to all concerned. Aided by the violent shock and impetus of the national industrial reconstruction, agrarian life and interests were now so thoroughly reformed that the face of our land was wholly changed. In 1760 England was still an essentially agricultural land; she still *exported* corn. Before 1800 we had ceased to be really agricultural and had become an industrial people; having far too little corn for ourselves we were then *importing* it.

Many writers see a dismal tragedy in this change.

They lay stress on the destruction of the small land-owner—the "decay of the yeomanry"—the final passing of "domestic industry"—the creation of the huge landed estates of modern days by enclosures—our utter dependence on foreign supplies of food—and insist that it involved England in inestimable losses. Others, on the contrary, maintain it was a necessary and a natural change which at the time was quite justified; that it has resulted evilly after more than a hundred years have passed is at the best a "regrettable accident." Which of these views you will adopt depends upon your view of the *necessity* of these changes. The facts are fairly clear as you will see. Put together in one account they at least make up one of the most interesting stories of our economic history.

The first fact to observe is that there was an enormous increase in the demand for corn and meat to feed the increasing multitudes of workers. This made agriculture extremely busy: visions of high profit and wealth arose before the business-like farmers' eyes. They alone could supply the great and pressing need of the people; for the law then forbade the importation of food—we were a "protected" people; and, even if the law had not existed, foreigners could not have profitably competed in our food markets, in so far as meat and perishable goods would have turned bad before they arrived. Slow transit over long distances and the absence of any scientific cold storage would have caused this. To grow as much as their farms would yield and to sell at the highest prices in the scantily supplied home markets, was the farmers' obvious policy.

But this rosy prospect faded more than a little before other urgent facts which almost at once made their appearance. Firstly, the landlords scenting

the new prosperity of their farmer tenants proceeded to raise their rents. Owing to the big rise in prices the farmers could at first afford to pay extra rent. When, however, their leases expired, the new rents fixed by the landlords were usually so high as to make the farmers pause and bite their lips in anger. What we should call "profiteering" went on in lavish and unrestrained style. In a short time it was clear that only those men who were lucky enough *to possess their own land* and thus be free from rent charges would make their fortunes. The full yield of the immense profits would be theirs.

This economic fact naturally caused men to buy, if possible, their own farms. The prices rose so high, however, that very few of the farmer-tenant class succeeded in doing this. On the other hand, the wealthy landlords commenced buying right and left. And on their increasing estates *they instituted a new organization of the agricultural industry*. They appointed stewards to superintend the working of the land and the raising of crops; and they employed "agricultural labourers"—wage workers—to do the ordinary farming work. Agriculture on big lines alone paid—as was the case in industry. This fact must be clearly grasped. The *capitalistic* principle, therefore, is seen at the bottom of both these new and tremendous changes. Thus do we find the "Yeomen of old England," *i.e.*, the farmer-tenant and the small farm owner, gradually beaten by the competition of the wealthier landholders in the important matter of land-possession.

But another and more powerful cause was also operating not only to drive out the ycoman but to smash completely the ancient "open field" system of agriculture—a system that in 1700 still existed in no less than three-fifths of England. This was

the discovery and widespread use of *new and much improved methods of farming*. Science at last came to the help of the agriculturist. The old, wasteful, unscientific system that could not yield enough corn, or produce stock with any meat worth eating, was compelled to depart for ever before the discoveries and experiments now made.

AGRICULTURAL METHOD.—The chief feature of this change was the introduction of a scientific *rotation of crops*. The "open field" system was based on the principle that one field must lie fallow, *i.e.*, have an annual holiday in order to get its "health" restored. The new method abolished the fallow field. The value of clover and rye-grass as nourishers of soil had become known. Their long roots not only broke up the earth but cleansed it. The expert growing of turnips also played a larger part in these improvements. Jethro Tull (1733) found out that turnips needed careful sowing in certain soil and that hoeing was important for them. He invented a drill for sowing the turnips in furrowed lines at the right depth. He describes it as follows: "A machine consisting of a hopper to be drawn by a boy that planted an acre sufficiently with six pounds of seed (whereas by the old hand sowing nine or ten pounds would be needed), and added to this hopper an exceeding light plough that made six channels eight inches asunder." His successful experiments attracted great landlords who were interested in farming, and even the king showed practical enthusiasm. Lord Townshend, nicknamed "Turnip Townshend," was the chief of these. Retiring to his vast estates in Norfolk he devoted his money and time to the new agricultural science. To his labours we owe the new *rotation* of crops—the "Norfolk" course of a fourfold rotation which did away with the fallow field. The cereals were sown, and clover and turnips

were grown between them. A comparison of the new and the old systems is as follows:—

<i>The Old</i>	<i>The New</i>
corn	corn
corn	clover
fallow	corn
corn	turnips
corn	corn
fallow	clover
corn	corn
corn	turnips
fallow	corn.

In this way all the ground was kept under cultivation, and no two corn crops followed one another, which was so bad for the ground.

More than this, great strides were made at this time in such subsidiary but necessary works, as marling and sub-soil drainage, the improvement of implements and their more efficient use—especially the iron plough. Manuring also now became a scientific operation—and the cultivation of root crops much increased.

Stock.—Successful experiments in the breeding and rearing of sheep and cattle were also introduced at this time. To Bakewell, a Lincolnshire grazier, belongs the honour of first breeding good sheep. His “New Leicesters” were strong, short-legged beasts, yielding just as much wool as the old “skin and bone,” well-nigh meatless sheep, and—what was more important—a full measure of *excellent meat*. Now food was England’s greatest need: wool, if necessary, could be imported. Therefore, this new source of prime mutton was in immediate and increasing demand. The improved breeding of sheep primarily for meat continued: naturally, there were fortunes to be made out of the business.

This example spread. The science of rearing fat, healthy cattle was taken up all over the country. The "gaunt leggy" oxen which were always half starved during the winter, owing to lack of fodder, now began to give place to a better breed—a breed which benefited by the abundant fodder produced from the cultivation of clover and the turnip roots in the new agriculture. The process of "winter-fattening" even began. By the end of this century this advance in stock-raising was very marked. To breed cattle was now in itself a recognized livelihood. It was also very lucrative. District vied with district: breed with breed. The names "Shorthorns," "Herefords," "Devons," became famous. The "roast beef of old England"—always rather a legendary dish—now became a succulent fact.

This splendid advance can also be proven by figures. In 1710 the average weight of beeves sold at Smithfield Market was 370 lbs; in 1795 it was 800 lbs; sheep increased from 28 lbs. to 80 lbs.; calves from 50 lbs. to 180 lbs.; and lambs from 18 lbs. to 50 lbs. (The average to-day is bullock, 12 cwt.; sheep, 80 lbs.)

THE BREAK UP OF THE "OPEN FIELD" SYSTEM.—The cry for food came louder and louder from the new industrial areas. To feed our growing population was an absolute necessity. Only by following fully the new methods both in husbandry and stock-raising was this at all possible. But these methods demanded operations on a large scale: *i.e.*, "capitalistic farming." The greater the farm, the vaster the estate and cattle-breeding ground, the better. Indeed, such operations only paid handsomely if carried out on big lines.

But three-fifths of arable England were still working on the ancient "open field" system. Much of the remaining two-fifths was being tenaciously held by the yeomen-farmers who refused to quit

before the invasion of the capitalist-farmer-land-owner until they were absolutely beaten and faced with ruin. What, therefore, was to be done? Clearly the only course was the sad, and from some points of view, unjust one of breaking up the "open field" system and substituting for it the new "large-farming" methods. This took place. Two forces worked to bring it about—(i) economic pressure; (ii) Government action. We will look briefly at each in turn.

(i) *Economic Pressure*.—The humble owner of "strips" of arable land in the old system had not succeeded in supporting his family by their cultivation alone. As we know, he and his family played an important part in the cottage industry which had flourished all over England. In this connexion the meaning of the historic sentence—"The domestic industry was the sheet-anchor of English agriculture"—can be seen. The institution of the factory and the shifting of the industries to new centres reacted so violently against this cottage industry that it practically killed it within a generation. With his economic "sheet-anchor" lost, what was the "strip-owner" to do?

Three courses lay open to him.

(a) To rely upon the produce of his strips and do any odd job for gain he could find—*e.g.*, harness mending or road repairing. This proved impossible.

(b) To adopt the new method of farming. Even if he knew it, this was also practically impossible. His "strips" were small: they were scattered: his holding was surrounded by hundreds of others—and, unless their owners all agreed to follow the new method, whatever he was able to do would be almost certainly spoiled. *E.g.*, he could not drain his land, as the drainage would flow on to his neighbours' strips, and quarrels would follow; he could not use

his strips in the fallow field, and so on. Nor could he profitably adopt these improvements even if he wished, for they demanded (i) much more land than he had—and all lying together; (ii) much more outlay of capital than he ever could possess—if they were to repay him. If, on the other hand, he turned his attention manfully and hopefully to stock-raising the same difficulties confronted him. Any improved cattle he bred or bought would have to graze and browse on the *common* pasture. In the company of the low-grade ordinary village beasts, his better cattle would quickly contract disease and scab; his efforts and money would be wasted. So this second course was foredoomed to failure.

(c) The third was to sell his strips and leave the home of his fathers. The call of the busy North—the new El Dorado—often rang in his ears. Travellers told wonderful tales of the wealth made there by the strong and the able. The human misery of the industrial areas was as yet happily unknown to him. With the resolution born of despair he accepted one of the many tempting offers made to him by landlords' agents ever mindful of his hopeless fight against adversity, and greedily waiting for the right moment to suggest the money bargain. He takes the gold and gives up his ancestral "strips." Leading his family he follows the trail to the nearest town where giant smoke-stacks blacken the sky, and joins the great army of factory workers.

(ii) *Government action: Enclosures.*—But only the minority of "strip-holders" took this courageous course of their own free will. They were wise. The rest, suffering indescribable hardship clung to their land, and made desperate efforts to improve its product. The serious state of the national food supply, however, compelled the Government to interfere. Farming on the largest scale was ap-

proved as a policy. The buying up of land and the creation of huge estates by rich farmer landlords was the only apparent solution of the food problem. Reform among "open field" farmers was hopeless; their obstinacy in refusing to sell their land to those who could put it to far better use was consequently regarded as a national injury. Recourse was, therefore, had to the *enclosure* as the only means of breaking up this worn out, uneconomic mode of land ownership and husbandry.

Enclosure meant enclosing or fencing in any area, with or without the consent of those who owned it, in favour of whoever secured the right of enclosure. It was granted by a private Act of Parliament. Certain conditions were supposed to be respected—such as, that dispossessed owners should be fairly compensated and that the consent of the Lord of the Manor, the tithe owner, and four-fifths of the commoners be obtained. This "enclosure movement" had been successfully followed during the sixteenth and early seventeenth centuries until the Government had stopped it. Now it returns with Government sanction: once started, it increases its pace until it is almost universal in its operation. Such private Acts of Parliament became exceedingly common. The violence and rapacity of landlords, and especially their agents, knew no bounds: "the knavery of commissioners and attorneys" is forcibly condemned by Arthur Young: he writes: "The proprietors of a large estate generally agree upon the measure...and fix upon their attorney before...any meeting of all the proprietors. The small proprietor has little or no weight in regulating the clauses of the Act. The property of the proprietors, especially of the small ones, is entirely at the mercy of the commissioners." The necessary legal conditions were broken ruthlessly. Land was added to land, farm to farm, estate to estate

—all, as private property, enclosed by fencing, over which it was a crime to trespass. Commoners by the thousands were forcibly dispossessed of their strips—frequently with inadequate compensation or none at all. Even village commons were enclosed. From 1760 to 1797 as many as 1,539 private enclosure Acts were passed: in 1801 the Government still viewing with alarm the dearth of home supplies, passed *A General Enclosure Act*. The scramble for land from this date became a race among the landlords. In the twenty-three years between 1797 to 1820 no less than 1,727 private Acts were also passed. As one eminent writer on this subject says: "Describing this whole tendency in a metaphor, we may say that for the first quarter of the century there was a trickle, which by the middle of the century had grown to a strong current and turned at the end into a widespread flood."¹

Such was the violent death suffered by the old "open-field" system. The thousands it had supported were for the most part drawn to the towns to swell the artisan population. Those who remained became agricultural labourers on the new model of the farmed estate. The enclosures of earlier centuries had for their object the creation of vast sheep farms: these final enclosures aimed at the creation of extensive tracts of arable land, under single ownership, for the purpose of raising a much greater supply of food. Both objects in the then existing economic conditions were justifiable. That both necessitated much individual suffering is unhappily undeniable: but the welfare of the State must always come before that of the individual.

As can now be easily imagined the small squire and yeoman class of landowners, and tenant farmers,

¹ Townsend Warner, *Landmarks of Industrial History*, p. 291.

to whose "destruction" reference has already been made, were unable to withstand the economic forces attacking them at this time: gradually they too were compelled to retire from their fields. These hostile forces were: (i) the great rise in rents. *E.g.*, In Norfolk one farm was rented at £180. In thirty years it was let at £800. Another rose from £18 to £240 in a shorter period. Young, who lived at the time, tells us that a tenfold increase was common near Norwich: he gives us an instance of one farmer who worked his farm of 1,500 acres so well that in thirty years he was able to buy an estate worth £1,800 a year.

(ii) The rapidly increasing costs of 'agricultural improvements and production. Even if a yeoman secured more land either by purchase or enclosure, the drain on his limited capital was so great that his attempt to work his enlarged farm on the new model proved too costly. So small an item as "fencing" ran away with a lot of money in those days.

(iii) The competition of the capitalistic farmer, both in the land and produce markets, proved too constant and too severe.

(iv) The violent rise and fall in the value of corn was sufficient in itself to ruin any who did make efforts to keep their land for a while.

It is therefore not to be wondered at that this class disappeared—that at last they sold their farms to the highest bidders and made their pilgrimage to the towns. The great estates devoured the smaller. Young estimated that out of 180,000 of this yeoman class, enjoying a prosperous independence on the land at the beginning of the century, scarcely a few hundreds remained at its close.

A fuller reference must now be made to point (iv) above—the violent fluctuation in the price

of corn. The need of corn being so great and the supply so short, you might reasonably suppose that prices would rise to a high level and keep high—not go up and down in see-saw fashion during this critical period of change. After a series of bad harvests, an Act of Parliament was passed in 1773 to keep the price of corn at a steady 48s. a quarter. When corn reached this high price it was allowed to be imported free; and no English corn could be *exported* after the price had risen to 44s. This caused great discontent among the new capitalist farmers. They said it prevented their making a fair profit either at home or abroad. As the object of the Government was to increase home production, concessions were allowed in the 1791 Act: 54s. was then made the price at which free *import* was allowed. About this time, however, England ceased to yield enough corn (despite the new processes) for the support of her multitudinous people. Bad and good harvests caused sensational ups and downs in the market prices. We were dependent in an ever-increasing degree on foreign supplies. The Napoleonic wars made these supplies uncertain. So on the whole prices rose. In 1795 wheat averaged 81s. 6d. in Windsor: in 1800 it touched 127s.; the average for 1802–8 was only 73s. 8d.; in 1812 it was 155s. These record prices caused the utmost speculation by the farming class. Inferior land was laid under cultivation, in the hope of even richer profits. The cost of cultivation increased, however, and if a bad harvest happened—as often it did—ruin faced the speculating farmer.

The main features of the *Agrarian Revolution* have now been noticed. It brought us great gains; it also inflicted us with sad losses. Improved and scientific farming, richer crops, larger area of culti-

vation, an enormous increase in food production, a cattle stock of excellent quality—a splendid attempt on the part of agrarian interests to support the new and the “hungry” England: such were its benefits.

Against these must be placed the loss of the old system of small free holdings, the loss of the yeomen class, the wholesale misery and hardship inseparable from the widespread shifting of the agricultural population, the problem of increased unemployment, and the destitution in the towns.

The organization of agrarian interests, that we know to-day, was then created. The three-fold division of landlord, farmer, and labourer appeared. Farming was based upon the capitalistic principle. In place of the old personal relationship between landlord and tenant, between farmer and man came the modern facts of contract and wage-employment.

Important political events were also influenced by this agrarian change. These will be dealt with in Chapter VIII.

EXERCISES

1. Trace the connection between the Industrial and the Agrarian Revolutions.
2. Account for the failure of the “open field” system.
- *3. Were the Enclosures of this period justified?
4. Describe England’s debt to the yeoman class.
5. What was the object of Corn Laws? Did they gain it?
- *6. How far did the wars of this period influence this great change?

CHAPTER VII

THE POLICY OF " LAISSEZ-FAIRE "

It is now time to consider the third phase of the vast change we have seen moving through the whole working life of our nation. This is the complete change that took place in the policy of the Government towards industry and commerce generally. It proved far reaching in its influence and is, consequently, full of importance. The economic history of this period cannot be understood unless the old and the new trade policies of the Government are compared and understood.

MERCANTILISM.—The old policy was known as *mercantilism*. Its object was to protect and nourish the national trade in order to enrich the country. This seems to be a good object. But it was not the object that mattered so much as the *means* taken to gain it. And trade policies are, after all, only means to gain an object. *Mercantilism*, therefore, must be considered as a method of enriching the country. Up to a certain stage of national development this method was very successful. After that stage had been reached it failed: as we shall see, it had to be given up in favour of another.

When our industries were beginning to grow strongly, when our trade in foreign markets was steadily increasing, when by the colonizing and conquest of North America and India our Empire was definitely founded, and our trade pursued its way rapidly into these new and vast colonial markets, the accepted views of statesmen and business men

were—(i) that our trade must be protected by law against undue competition of foreign rivals, such as the French and the Dutch, in both our home and our colonial markets; and (ii) that it must be assisted by Government “bounties” and “subsidies”—*i.e.*, grants of public money to industries—in its efforts to beat foreign trading rivals by controlling the markets.

The period during which these economic views were accepted and followed was covered by the seventeenth and the eighteenth centuries—*i.e.*, the period which witnessed our amazing success as a colonizing people, the winning of our Empire, and the beginning of the revolutions in our agricultural and industrial national life. Thus, we must expect to find—and do find—the wealth and power of our nation always increasing, chiefly through the fostering care of the Government. The Government definitely *interfered* in trade and industry: regulation after regulation was laid down: restriction followed restriction: tariff walls were raised, lowered or raised again as the needs of the commercial situation demanded: “bounties” were paid upon prices of home products: “subsidies” were given to strengthen the finances of trades weakened by commercial rivalry: the hours of the workers were prescribed by law: wages of the workers were settled by local magistrates: the conditions of industrial life were supervised by Government officials.

The best and most commonly known examples of this *mercantile policy* are (i) the Navigation Acts; (ii) The economic exploitation of our colonies under the “Old Colonial System.”

(i) The *Navigation laws* began as early as 1485, when it was laid down that Gascon wine must be brought to England in English vessels manned by English sailors. This policy of restricting the carry-

ing of merchandise to English "bottoms" is seen in all the long series of these laws. It clearly encouraged and developed *English* shipping and commerce enormously. In 1540 an Act was passed "to develop seamanship, strengthen the navy, and bring prosperity to our ports" by forbidding the importation of goods of foreign vessels if English ships were obtainable. Elizabeth granted bounties to ship-builders, made the eating of fish compulsory in order to stimulate the fishing industry, and ordered that determined efforts should be made to clear the channel of piratical craft. In the seventeenth century the Navigation Acts were strengthened and enforced. Colonial markets were now open. Goods carried to them were exempt from export duties and had to go in English ships. In 1651 an Act aimed to protect English merchants from their Dutch rivals, "forbade the bringing to England of goods from Asia, Africa, or America, except in English ships." This led to war with Holland. In 1660 another Act ordered that importation or exportation of goods from British possessions was only to be made in English ships or those in English possession. And so the policy was resolutely continued. Not until 1822 do we find an Act passed permitting colonies to send their goods to American ports in American vessels. And not until 1825 were foreign goods admitted to English ports if they came in ships belonging to the country which produced them. Finally, in 1849, the whole bundle of Navigation Acts were repealed.

Under this heading, too, *Commercial Treaties* ought to be noticed. These were arrangements (in our favour as much as possible) for the interchange of trade between our land and any particular other. This policy originated in the Middle Ages. Especially, however, was it determinedly pursued in the period we are reviewing. One of the most famous is the

Magnus Intercursus, 1496, made with Antwerp by which English cloth was allowed into that flourishing city. During the sixteenth, seventeenth, and eighteenth centuries, many such international commercial treaties were made, especially with the Low Countries, France, Spain, Portugal, and Prussia. The most famous are 1667 with Spain, 1703 with Portugal, 1713 the Assiento Contract, 1750 with Spain, 1786 with France.

(ii) *The old Colonial System*.—Important as these Treaties were, they were scarcely so successful as the policy which we followed in regard to our commerce with our colonies, and which allowed our merchants and trading companies to plunder those new and wealthy lands for their own enrichment and ours. *The view we then accepted and shared of imperial responsibilities was wholly different from what we hold to-day.* Colonies in the sixteenth, seventeenth, and eighteenth centuries were looked upon as treasure grounds to be rifled and despoiled solely by and in the financial interests of the motherland which was lucky enough to possess them. Our forefathers can scarcely be blamed for their attitude. It was a natural attitude. Moreover, it had been the attitude of all the great imperial peoples of the past. Even the mighty and extremely well ordered Empire of Rome ransacked her vast possessions and lived on the spoil. The Venetians robbed the Orient; the Spanish plundered their American colonies: so did the French and the Dutch; we followed this example of the ages and did the same. As Seeley, the famous historian put it we regarded our colonies as ripe fruit to be plucked. And such priceless treasure houses as India—a land fabulously wealthy with the jewelled legacies of many an ancient empire—were worth the best and most daring attention of the despoiler.

Thus it happened that we controlled all colonial commerce unrelentingly in our own interest. The Navigation Laws did this ; so also did our *free* export of goods to colonial markets, and our insistent taxation of colonial goods which were sent *into* our own ports. Raw produce, such as sugar, tobacco, cotton-wool, indigo, and dyes, which we wanted badly, they had to send home and nowhere else. If their manufactures were the same as ours, we refused to injure our own home trade by receiving them here (Navigation Act, 1660). Especially, however, was this policy pursued by the founding of the famous *Chartered Companies*. A Chartered Company was a small group of merchants and business men, who obtained (usually for a big price) a charter from the Crown which gave them certain trading rights over certain colonial areas. These rights were usually so numerous and well protected that they amounted to a *monopoly* of commercial privileges over the area involved. Any alien traders or home rivals were warned off. But trade in such "new" places was almost impossible unless some form of law and order was guaranteed to the colonists and among the native populations. It was, therefore, found necessary to add large powers of government and administration to the trading monopoly, so that the Company could safeguard itself and its trading operations by its own governmental actions, and be responsible for its own fortunes.

Thus we find many of our new colonial possessions virtually "leased" for a term of years to Chartered Companies whose one object was wealth. Trade and gain were the primary considerations on the part of the merchants : on the part of our Government political as well as commercial reasons were borne in mind. "To open up" new lands was an expensive and difficult task ; it was also very unsatisfactory

“to administer” them from London, in those days of slow travel. To *loan* the right of government, administration, and trade to a group of keen business men, whose headquarters were in London, was so easy a way of shelving its big obligations to these colonies that there is little wonder that the Government eagerly took it.

On the whole these Companies were wonderfully successful. They did at least “open up” the Empire in these first days, and make it a fact that the British could understand—even if they did wax fat on amassed plunder or keep armies to hold down their “petty kingdoms” or rule like despots or control trade selfishly in their own interests with a hand of iron. In the eye of the period these Companies were most praiseworthy institutions: their obvious faults were hidden by the immense increase of national trade, power, and prosperity that resulted from their operations.

Some of the most famous of these numerous Companies were the Merchant Adventurers, founded in 1407, to trade with Flanders, the Baltic, and the Mediterranean, the Muscovy Company (1553) to trade with Russia, the Eastland Company (1568) to trade with Scandinavia, The East India Company (1600) to trade in the Pacific. The seventeenth century was their golden age. The East India Company then fastened its tentacles on India, and in time practically ruled and administered this vast imperial possession in its own commercial interests: The Hudson Bay Company (1670) assumed practical responsibility for the Government of Canada. 1629, saw the founding of the Massachusetts Bay Company; 1662, the Connecticut Company; 1663, The Rhode Island Company; 1672, the African Company which was to bring gold to England and take negroes to the Plantations.

Such was the old policy of well nigh complete Government control in trade, commerce, agriculture, and industry : also the " Old Colonial System " by which the Government got rid of its duties to the colonies—for a price. Now for the new.

LAISSEZ-FAIRE.—In 1776 our American Colonists were in open revolt. By 1780 we had lost them for ever. The policy of mercantilism had received a mortal blow. In 1776 Adam Smith published his world famous book *The Wealth of Nations*. A professor at Glasgow, a learned economist and a brilliant writer, he denounced and destroyed the economics of the Mercantile System. In 1776 the agricultural and industrial revolutions had well started on their astonishing courses. In 1786 the historic trial of Warren Hastings, the first Governor-General of India, took place. He was accused of *misgovernment* in India.

These events killed the old policy. These events developed the new. Which was the most powerful no one can say. The American revolt proved that restrictions on colonial trade were *in the end* harmful to the Motherland : the trial of Hastings exposed the failure of the " Old Colonial System " of government : the tremendous leap forward in industry as a result of the introduction of machine-power and the factory system, did away with the necessity for the " subsidies " and protective measures of mercantilism. The speculation and enterprise of this age were really opposed to any form of governmental restraint. It disregarded the old economic, and fashioned for itself a new. And in Adam Smith, it found its most daring and successful apostle. He preached its message. He devoted his life to convert the British from the folly of clinging to their worn out system of commerce ; and he succeeded.

What was the new economics ? Let us learn at

least the simple principle underlying them from Adam Smith's writings. He claimed that trade should be left entirely FREE to go where and how it chanced. It would then take its own natural course, and this in the end would be the most profitable. He denounced all restrictions on trade and industry. The regulation of both, the organization of both, ought to be left wholly in *private* hands. Anything which checked economic liberty was injurious to the nation : it lessened—not increased—its wealth. Therefore, he pleaded that every individual should be utterly free—labourer, artisan, factor, merchant, master, capitalist—all should follow their *self-interest* unswervingly ; although they seemed selfish, they were not really so : in doing their best for themselves, they would do their best *without knowing it* for the nation—and the wealth of the nation would surely increase at a much greater rate by reason of their full and unchecked output of energy. Self-interest would drive a manufacturer to make the best article at the lowest price. This would mean a big sale. Business would boom : the employer and his workers and the State would profit.

In the same way the larger question of national, international, and colonial trade came to be regarded. The doctrine of "*Free Trade*" was preached as far superior to that of the discredited "*Protection*." The "open door" was demanded and proven, at least by theory, to be preferable to the tariff walls, restrictive duties, expensive bounties, etc., which had been such prominent features of the old system. The lesson America had so sharply taught us was swiftly seized upon and used unsparingly to convert the nation to the new economic point of view.

It is not easy to change the settled economic policy of any country. It must be done gradually. The great change to "*Free Trade*" now began, but it

took more than fifty years to become fully established. Adam Smith won—but his victory was slow. He had certainly interpreted the economic tendencies of his age aright: but he could not hasten their movements. He could only arouse men to face the great questions of Industrial Liberty and Free Trade—and train them to see and accept his solutions. Thus did he become the "Father of Modern Political Economy." His disciples took up his work; they became a famous "school" of political economists, and exercised a weighty influence on the tremendous industrial and commercial changes that occurred during their period. They approached economics in a new scientific spirit. They sought and found satisfactory general principles upon which to base explanations of such facts as price, value, rent, profits, wages, etc.—facts of industrial life which were worrying and puzzling all business men.

Especially did this new view of *liberty in industry* appeal, as time went on, to the employing class who were directing the re-organization of trade and artisan labour. Industry was becoming very profitable: Government interference was now unnecessary and annoying in its restraints—especially, *in regard to hours of labour, wages, and conditions of work*. If the masters could be rid of this old-fashioned "protection" of workmen, they would be free to make their own conditions of wage employment—and, very possibly, secure more work for less pay. "Freedom in Industry!" "No Government interference!" "Individual liberty!" Such, therefore, were the cries that now arose from every industrial centre. Slowly the Government gave way.

About this time the wealthy cotton-spinners and "captains of industry" in Lancashire formed themselves into a powerful political party, and were known as *The Manchester School*. This party gave their full

support to this new policy of "non-interference," and exercised, as we shall see, an immensely important influence on the politics and economics of the ensuing period. The work of this "school" should be studied and known.

Laissez-faire was the phrase by which this new policy was known and by which history speaks of it. These French words mean *let men do as they please*. This expresses the spirit at least—if not the actual fact—of the profound change in the economic view. It gives a full idea of the *individualism*—the claim to personal liberty—of the movement and its doctrine. It also reveals how far the restrictive policy of mercantilism was discredited and given up.

It will be necessary to return to this subject in Chapter X. Not until 1849 were the last remnants of Mercantilism destroyed, and the policy of Free Trade fully adopted by the Government. The long struggle between Whigs and Tories, between the old and the new economists, was bitterly contested and of high political importance: we shall have to review it especially from the standpoint of the Corn Laws and the national food supply. Here, however, it will suffice to note the chief events which mark the decline of the Old Colonial System and the decay of mercantilism.

The trial of Warren Hastings previously referred to revealed the beginnings of our *modern colonial policy*. To protect our colonies, to foster their strength, to increase their wealth, to govern them for their own sake rather than ours, to train them to gain and to value the supreme prize of self-government—such are the chief objects of our modern colonial politics. At last we began to see the truth that by *developing* our Empire it would enrich us more than if we plundered it. The old economic policy was reversed.

In 1773, Lord North passed the "Regulation Act for the Government of India," which first marked the Government's intention of taking over the rule and administration of India from the unjust and selfish hands of the East India Company. This Act did not prove satisfactory. In 1784 Pitt's India Bill was passed. This enacted far reaching reforms. It set up a form of government in India which had definite authority over the civil and military administration of the Company. It made the British Government finally responsible for the *welfare* of India. This measure continued in force till 1858—after the Indian Mutiny—when further reforms were passed which placed the whole administration as well as the responsibility of government in the hands of our own Government.

The trial of Warren Hastings for injustice and misgovernment in India followed Pitt's great Bill. It showed at least that the Government were earnest in their desire for reform and change in India. The case dragged on for nine years and Warren Hastings was acquitted. But the exposure it made of the criminal nature of the "Old Colonial System" was so ruthless and complete, that it was discredited for ever and certainly doomed. The political as well as the economic lesson of the loss of our American Colonies had fortunately been taken well to heart.

Other important evidences—apart from this prime example of reform in India—of our new policy are :

(i) The reduction of many tariff duties in 1784-5-6—a movement which ended in a Commercial Treaty with France, which abolished most of the protective duties between the two countries—and thus definitely introduced *Free Trade*.

(ii) In 1796, the Navigation Laws were relaxed in favour of the United States.

(iii) In 1813, trade to India was thrown open.

(iv) In 1820 appeared the historic *Petition of the London Chamber of Commerce* against commercial restrictions. It declared that buying in the cheapest market and selling in the dearest is the best rule for the nation as well as for the individual. This ranged London along with the Manchester School in support of Free Trade.

(v) 1845, Repeal of Corn Laws.

(vi) 1849, Repeal of the Navigation Acts.

With (v) and (vi) the long battle was over. Free Trade had vanquished Mercantilism. *Laissez-faire* was the dominant economic principle.

RESULTS.—That our trade increased enormously under Free Trade will be seen when we review the nineteenth century. Here we will note how far it increased during the period of change we are now considering. It literally bounded forward. Between 1783 and 1800 both manufactures and foreign trade were developed at an extraordinary rate. The official value of *exports* in 1783 was £13,896,415, and of *imports* £11,651,281. In 1800 the *exports* were £34,381,617, and the *imports* were £28,257,781. Or, as another authority¹ puts it: there was “a sixty-fold increase in the import of cotton, a tenfold increase in the Yorkshire clothing trade, a twentyfold increase in the output of pig-iron, a sevenfold increase in the total volume of export, a fivefold increase in imports, between the years 1740 and 1815.”

So vast an expanse of industry and commerce resulted as much from the introduction of *Laissez-faire* into both these spheres of work and interest, as from the “revolutions” we have already discussed. It seemed to justify Free Trade. In the first half of the nineteenth century, however, this remarkable progress was completely overshadowed by a colossal increase in our commercial production and national

¹Townsend Warner, *Ibid.*, p. 307.

prosperity. The fact that in 1715 our national debt was only £17,000,000—and in 1815—in consequence of the Napoleonic Wars—it had reached the mammoth sum of £800,000,000, illustrates best how rich our "revolutionized" industries and change of economic policy had made us.

EXERCISES

1. The chief features of Mercantilism.
2. What was the "political and economic lesson" the loss of the American Colonies taught us?
3. How did "laissez-faire" influence (a) the Colonies, (b) Industry?
- *4. Discuss the morality of both these economic policies.
5. Why is a "national debt" an indication of national wealth?
- *6. Is it (a) possible, (b) justifiable, to exclude State interference in industry?

CHAPTER VIII

SOCIAL AND INDUSTRIAL CONDITIONS (1760-1830)

IN describing the changes which brought about the rise of modern industrial conditions, we glanced occasionally at the *human* side of affairs. Here we must give more attention to it. It is a sad task—one from which the historian would gladly be relieved. From the point of view of the worker, either industrial or agricultural, this period is a prolonged agony—a time of tragic and desperate struggle to live. The evil in the conditions of work, and, consequently, of life, was widespread, deep-rooted, and terrible in its effects upon the rapidly increasing population. Vice and crime, unemployment and over-employment, starvation and destitute poverty, oppression, and economic slavery, illness, disease, and physical deformity, appalling congestion in towns and equally appalling depopulation of the countryside, luxury, wealth, pomp and waste, idleness and sloth, misery and despair—all are shamelessly revealed in their deadly work of banishing contentment, health, and happiness from the life of these unfortunate generations—the generations who laid so firmly the foundations of Britain's modern greatness. Willingly—were it possible—would we cast a veil over this part of our story. But history is a proud and a loyal servant of Truth. A brief account, at least, of these social and industrial conditions must be given.

It is a strange fact that the new policy of *Laissez-faire*, which was destined to bring so vast an increase in our national wealth, should have been in the main

responsible for the inhuman suffering of this period. Liberty in industry and commerce was certainly gained—and was a great boon ; but it meant, as we shall see, the swift loss of the liberty and independence of the worker. Under pressure of the new economic doctrine, the Government ceased to interfere in industry, it ceased to supervise the conditions of labour, it ceased to regulate “ hours ” and insist on the payment of fair wages. The new organization of work in the factory system, in the capitalistic agriculture, in the iron trade workshops, in the mines—was developed on the principle of “ freedom ” or “ free action ” of the employer of labour. Note, too, for this is very important, that “ labour,” *i.e.*, the whole mass of men and women and children who wanted work, was also allowed its “ freedom.” All “ restrictions ” on labour were given up as useless and unnecessary. *E.g.*, the *Settlement* Laws, which prevented workers from going to a new town or district unless they could show enough money to keep them off the Poor-law for a fair time, were abolished. Apprentice Laws which compelled an artisan to serve seven years’ apprenticeship before he could follow a trade, were disregarded so much that they fell into disuse. It became the accepted fact that both masters and men had complete liberty in regard to one another. A master was *free* to offer work, a worker was *free* to take or refuse it : the wages, hours, and other conditions attaching to the work, were settled between them : it was a *private affair*—a bargain which *either of the parties could break and end freely if it pleased them.* .

This fact of “ freedom of contract ” was quickly established. It was at the bottom of all the misery of this period. It seemed in itself to be fair enough : in its actual working it placed the toiler wholly at the mercy of his employer.

INDUSTRIAL CONDITIONS.—The first thing to grasp is that an enormous influx of labour-power continuously went on into the new industrial areas. This naturally resulted from the break up of the "open field" system of farming, the decay and death of domestic industry, the "enclosures," and the fact that men will always direct their steps towards any place which is known to yield quick fortunes.

The effect of this movement of the population was an ever increasing "free labour market"—*i.e.*, a supply of human labour-power awaiting employment. The new factory system absorbed a great deal of it; and with the expansion of industry more and more was given work.¹ But it was never exhausted. There was always a large "unemployed" class which slowly grew. The violent ups and downs in the fortunes of some industries—the sudden closing down of mills—the equally sudden decision of masters to decrease the number of their hands when trade was slack or when improved machinery was introduced—the "short time" system—helped to add to this "reservoir of floating labour-power." Moreover, the birthrate of these new areas broke all records: and every fresh child born was a possible future worker.

It is not surprising then that the hopes and ambitions of many thousands of workers were rudely disappointed, that the struggle to live became fiercer as time went on, that *competition* became a prominent feature in industrial life, that men saw in the new power of machinery a grim foe, which deprived them of work and starved their families, that grave riots and the destruction of machines, and especially of new labour-saving machinery, were not uncommon occurrences, that labour generally was trained by

¹ In 1760 the cotton trade employed 50,000 hands: in 1833 the number was 1,500,000.

adversity to look upon the employers and mill-owners as its enemies, and that the latter did not hesitate to take full advantage of their freedom, and the "freedom of contract," to place their own interests first. A vivid picture of these facts and events can be seen in Charlotte Brontë's famous novel, *Shirley*.

Conditions *inside* the factories and workshops were about as bad as they could be. The buildings were always overcrowded with machinery and workers. Light and air space were not then considered important. Nor were sanitary arrangements. Machinery was all exposed or "unfenced": accidents were very common; and no law existed in those days to gain for the broken employee relief in his loss or illness. The worker was "free": he took his risks: if they maimed or killed him it was his own concern. Labour power was plentiful. For the vacant place a hundred workers would immediately clamour. This being so, employers did not see the need of spending any money in improving, or in "making safe" or healthy, the conditions of labour. They became accustomed to regard man as a machine: broken or worn out he was "scrapped," and another was put in his place.

Hours of labour were as long as human endurance would stand. Twelve hours was the usual day's work: thirteen, fourteen, fifteen, and even more were commonly worked. Meal times did not exist in our modern sense. There was a "break" in the mid-day: other meals were snatched as and when they could be. "I have worked till 12 p.m. last summer; we began at 6. I told book-keeper I did not like to work so late; he said I must. We took our breakfast and tea as we could, a bite and a run, sometimes not able to eat it from its being so covered with dust." Such is the recorded evidence of one of these factory workers.

Wages were fixed by the employers, who changed the rate as often as they wished. Generally speaking, the rate ranged low—so low indeed that despite these never-ending days of toil, the wolf was scarcely kept from the ordinary worker's door: certainly, he had no margin for any "comforts of life." Any effort to obtain better wages and conditions of work, was likely to lead to instant dismissal. In this respect the law opposed any action by the workers to combine or to form an association; and, naturally, the employers took full advantage of its powers.

The lot of the strong male artisan or labourer was cast in a hard place: the lot of his weak companion was harder still. When, however, we turn to see the fate of the women and the children, we can scarcely believe what history records. In the factories, especially in the textile trade, there was a great demand for women and children. With the improvement of machinery and the general institution of the power loom, all the heavy work was done by the machines. To "mind" the machines or "to piece" together broken yarn or to fetch and carry materials, could be done by women and children. In 1813 there were 2,400 power-looms in use; in 1820 there were 14,150. These machines were so easy that a girl and a boy of fifteen could "look after" four at once, and do nine times the daily work of the old skilled hand weaver! For such labour very low wages were paid. To employ men at 1s. a day, for work which a woman would do for 4d. and a child for 1d., was against the teaching of *Laisssez-faire*. So the mills were full of this cheap labour. Men, women, and children all worked together in the same conditions for the same long hours, with the same terrible results upon their health. "The factories were not factories of our day. Many were cramped, ill-lighted, ill-ventilated, damp and overheated; there

were no health precautions. Disease was common. The dust of the Lancashire cotton mills or from the grinding of steel goods in Sheffield, soon settled on weak lungs; lead poisoning killed the workers in the potteries; exposure and sudden heat inside the mills brought bronchitis and consumption."

For the women home life was an impossibility: they merely slept in their abode: every other domestic duty had to be abandoned. The bad effect of this—particularly, that they could not attend to their children—can be imagined.

But for the children whose nimble fingers helped to make many a fortune only pity can be given: their fate was that of the most cruelly treated slaves. At eight, at seven, even at six years of age, they were taken to the mill. They worked till they fell asleep. "I have seen them fall asleep, and they have been performing their work with their hands while they were asleep, after the machine had stopped," said one witness before the House of Commons (1833). Indeed, the mills devoured child labour. If the local supply was not large enough the Poor Law Authorities of the large towns got rid of their young charges by despatching them into the scene of their "life's work." London sent very many waggon loads of these innocent victims to die in Lancashire and elsewhere. Sir Spencer Walpole in his *History of England* (iii. p. 201), wrote: "The parent who would endeavour to realize the life of a factory child in 1832 should try to imagine his own little boy or girl—eight or nine years of age—working in a factory. He should try to recollect that it would be his duty to rouse the child on a cold winter's morning at five that it might be at its work at six; that day after day, week after week, month after month, it would be forced to rise at the same hour; that with two short intervals of half an hour each, it would be kept to its dull em-

ployment for thirteen hours every day ; that during the whole of that time, it would be breathing a dusty, unwholesome atmosphere, rarely able to relieve its limbs by sitting down." Under harsh masters (such *e.g.*, as described in Disraeli's novel, *Sybil*), these children were whipped and beaten, doused with water when sleepy, half-starved and forced to work out their last ounce of energy. Those who survived, as may be imagined, grew up more or less stunted and deformed men and women, hard-hearted, ignorant, debased beings, wholly unfit to be the parents of the future generation. A witness from Keighley was asked if he had noticed such deformed mill children. He said : " Yes ! in Keighley you could find waggon-loads "—an answer proved afterwards by medical testimony.

It is unwise to lay all the blame upon the masters for these awful conditions. The full blame must be laid upon the *laissez-faire* system which allowed so fierce a competition in the labour market that women and children could so easily displace men. Some blame must also rest with the parents. Grown callous and evil in their way of life, they did not hesitate to send their children to the mill, and to take their pittances from them. The greed for money had laid its claws around the hearts of all men in these stern days. With wages low, prices high, life hard to support, it was, after all, a temptation not easy to resist for parents to send their children " out to work " as soon as possible.

Leaving the industrial areas, let us go into the new mining areas and see if things are better there. Coal and iron were in huge demand. Mines were being sunk in many districts. Science had come to the help of mining, and its possibilities were great, its promise of wealth enormous. Vast numbers of men, women, and children gathered in these neigh-

bourhoods—all to seek work and to live. Their labour was wanted.

The conditions of their life and labour were, however, even worse than those of the industrial areas. The work was more exhausting, the hours were as long, the wages were terribly low, the health-conditions were bad, fatal accidents were very common, and worst of all, both women and children were employed in the mines themselves. The work now done by ponies or tramways in the seams and galleries was then done by these "mine-labourers." Harnessed to the ropes or chains, barely clad, and in appearance like savages, women and boys hauled and pushed the trucks of coal along the galleries. Often these were so low that they had to crawl or bend double to do their work. Many seams were only twenty-two or twenty-eight inches high, through which only small children could pass. "No horse on an overloaded coach, no donkey in a costermonger's barrow, few slaves on the properties of West Indian plantations, experienced the treatment which was the lot of these children—'hurriers'—in mines." (Sir Spencer Walpole.) Poor-law children were also commonly sent to the mines. "To overdrive (such) labour was both easy and tempting; and the only checks that might have been effective—current opinion and the law—did nothing to interfere. At first, indeed, they both inclined to favour the strong against the weak; the reality of the evils went in some respects even beyond the imagination." (Townsend Warner.)

In the sphere of agriculture a growing distress was also the common experience of the labourers. The hideous conditions existing in the trades and mines were naturally not to be found: the actual physical condition of agricultural work must always be healthy. It was at least labour in the "open

air and God's sunlight." Distress, however, came from other conditions. There was comparatively little work to be done: the wages paid were very low: the cost of living was high: starvation and unemployment played havoc with the lives and prospects of the rural population. Despite the steady flow of these rural families to the towns, it took many years—some fifty at least—for the "depopulation of the countrysides" to become a fact in our national life. During this period there always remained more than sufficient labour to carry on the work of the vast farms newly organized on the "extensive" system. Moreover, machinery made its appearance and gradually displaced more labour. Remember, too, as already pointed out, "domestic industries" were being killed by the competition of the factory system—and the agricultural labourer pure and simple, now became a definite occupation. This new type of worker was dependent absolutely on his wages and what he could grow for himself to support his usually large family. Wages differed in different areas. Compared to those paid before 1750 they show a fair increase: but in reality they were less, for food prices rose enormously—and in the famine years—quite frequent, unfortunately, owing to the Napoleonic War and bad harvests—all the necessities of life were terribly dear. *E.g.*, in 1740 wheat averaged 30s. a quarter: in 1790, it was 45s.: in 1802-8, it averaged 73s.: in 1801, it was 116s., and in 1812 as high as 155s. How this affected the agricultural labourer earning 10s. 9d. a week near London or 6s. 3d. in the Midlands, or 4s. 6d. as is recorded of one district in Lancashire—you can only guess.

It is no wonder that at this time the number of families who sought help from the Poor Law or "threw themselves on to the rates" increased so enormously, that the whole system of Poor Law relief threatened

to collapse, and had to be reformed. This feature we must look at more closely in Chapter XVII.

To sum up, conditions of work in the new organization of industry—in factory, workshop, mine, colliery, agriculture—were the worst our nation has ever experienced. And it is interesting to note that during this period the agitation was set on foot to abolish slavery. Slavery was denounced as inhuman. In England this agitation found its strongest supporters; and in 1833 slavery was officially abolished throughout the British Empire.

SOCIAL CONDITIONS.—By social conditions we mean the conditions of life prevailing *outside* the factory and mine—the conditions of home life, of the state of society in the newly settled areas, the “mushroom” towns, and manufacturing centres.

Clearly disorder was the chief feature in all social arrangements. So rapidly did the “shifting of population” take place that social re-settlement was too hurried to follow any sort of decent plan. Groups of huts appeared: blocks of “cottages” arose: tents, shants, and tenement dwellings were hastily constructed. The “jerry-builder” came on the scene and was in a fever to make his fortune. Streets, roads, alleys, were formed by the accident of building houses, rather than according to design. Soon all the available land round and between the mills, the workshops, or the mines, was covered with the dwellings of the poor. Naturally, land rose higher and higher in value: the rents charged rose in proportion; fortunes resulted. Order, law, government, were almost absent at first: when, in course of time, some strong form of local government was set up, it was too late to bring healthy conditions to the town or area. The streets were unpaved, unlighted: no pure water supply existed—for most of the rivers were polluted by industrial processes;

no public scheme of sanitation existed: everything was run on "natural" lines: the strong survived: the weak perished.

The congestion and overcrowding of these new towns was appalling. No limit was put to the influx of workers: the more the better, according to *laissez-faire*. The birth-rate rose sensationally. Two or more large families commonly shared the smallest of dwellings. The increasing millions had to sleep—at least—and they did somehow and somewhere. Clearly, except to the fortunate few, home life in our modern sense did not exist. Circumstances made it impossible. The larger the family and the more need of a decent home to house and rear it, the less chance there was of its being obtained. Rent alone would have prevented it.

Then famine was often experienced. It scourged the massed "urban" population even worse than the "rural." The old "protective" policy was still applied to corn—it was not abolished till 1845—and as bread formed the chief article of food to the workers—the constant soar in prices meant semi-starvation at the most. Even the best wages had to be eked out. The margin between income and expenses to live was so small that even a short rise in prices produced hunger and suffering. The poor had to live on rye or barley bread. Meat was too dear to be bought often. Firing was very costly: so were rushlights and candles—if these were wanted: as to clothing, even in the cloth-making districts, it was so dear that any old garment had to be used to protect and warm the body. Drink—especially strong beer—was relatively cheap.

In the midst of such depressing conditions the urban populations struggled to live. Death was common. Plague and pestilence could not neglect such splendid haunts as these insanitary settlements

offered them. Infantile mortality was especially heavy. All the same the increase of the people went on unabated.

That those who survived, those who were born and brought up in such circumstances, those who prospered, those who failed, should have become hardened, brutal, callous, ignorant, and shameless, was a natural consequence. Indeed, quickly did all the finer side of life disappear: all the hopes, ideals, and moral control, that make true manhood or womanhood so splendid a possession, could not live or be trained aright in the smoke-blackened, disease-stricken and homeless settlements, of the new working classes. That riots, pillage, lust, crime, drunkenness, and despair were common is as we should expect. There was no educational system then to teach the poor how to value life and all that matters. To read and to write were all the "educated" among them could do; and not one in a hundred had these accomplishments other than in a crude way. It was, perhaps, as well. That an intelligent and "educated" people would have struggled and suffered as they did—and so laid the foundations of Britain's fortunes—is demanding too much of human belief.

If this brief description seems too terrible—a few figures and facts concerning prisons and crimes during this period may be useful. Such evidence throws a lurid light over social conditions: it proves the hardness and cruelty of the age.

The criminal law was very severe: in 1760 no less than 160 crimes were punished with death: this number grew; in 1837 it was 220. *E.g.*, a theft of more than 12*d.* was a capital offence. This severity increased crime. If to murder was an equal offence to stealing 13*d.*, in the eyes of the law, the thief would not hesitate to kill—if his escape depended on it. Between 1781 and 1787 executions were very

numerous. In 1788 on two occasions a batch of twenty prisoners were hanged at once. In ten months of 1785, 96 hangings took place at the Old Bailey alone; twenty-one death sentences were passed at Kingston; twelve at Lincoln; sixteen at Gloucester, and so on. At the end of one period, in 1831, no less than 1,601 people were sentenced to death. So depraved was the age that vast crowds gathered to see the poor wretches pass to their doom. In 1767 over 80,000 assembled at Moorfields, to watch an execution: in 1773 at Tyburn over 20,000 saw a woman strangled at the stake and burnt. Not till 1790 was the burning of women stopped. Public whipping of men and women was common: on the stocks or pillory victims were frequently pelted to death.

Prisons and gaols were numerous: they were "horrible dens in which men and women, old and young, felons, and debtors, were crowded together." Most of them had no water supply: all had little air. Gaol fever and smallpox were constantly sweeping through their narrow, underground chambers and cells. Crime, vice, disease, huddled there—often in chains. As late as 1870 there were over 100 great prisons; all were full: to-day there are only sixty, and these are always half-empty.

The transportation of convicts to America ceased in 1776. Till 1784 these prisoners were kept in hulks lying in the Thames and elsewhere: their fate can be imagined. In 1784 they were transported to British dominions overseas—especially to Australia. Even boys and girls were so punished. In 1813, *e.g.*, William Collins, aged fifteen, was transported for seven years for stealing a pocket book, and Mary Ruby, aged fifteen, suffered the same sentence for stealing a piece of ribbon. In 1837, Robert Reynolds, aged fourteen, was similarly punished for stealing

a pocket handkerchief. Transportation "meant penal servitude in an unpeopled, semi-tropical colony." Prisoners were taken there in the hulks; the voyage lasted nine months; chained to the floor of dark cells they were willing victims of death. Those who made the journey were set to work under the most brutal conditions. To all intents and purposes they were slaves.

The above are not isolated examples of crime and punishment. They are only types of what was all too commonly the unhappy truth of criminal law and proceedings. And if children were treated in this awful way, the attitude of the law to adult crime can be imagined to have been extraordinarily severe. Truly, the whole of our society—*i.e.*, the organized social life of our State—in this period, was horribly degraded and recklessly harsh. In customs, manners, habits and ways of life—in taste, art, drama, literature—in public life, politics, religion—the same demoralizing low standard is generally to be found. The tragic struggle in the mines and factories was only one phase of widespread and radical confusion, disorder, and injustice in our national life: the "revolutions," the "protection" of corn by the corn laws, the unrestrained abuse of the "freedom" given by *laissez-faire*, the heavy financial burden of a prolonged war, the grave political discontent of the times—these were some of the root causes of this sad state of things. Little wonder if in the view of the age "things were going rapidly from bad to worse, and the entire race of artisans seemed to be sinking into complete degradation."

But we have seen the worst; a better state was coming: the improvement was slow but it was continuous: within another generation the real horrors of this period of sacrifice and suffering were forgotten in fairer and healthier conditions of life

and labour. Drastic remedies were necessary : these were bravely undertaken by a small band of civil heroes. Their reforming labours centred around three important interests: (i) The Poor Law; (ii) The Factory Legislation; (iii) The Union of the workers. How far they succeeded will be seen in later chapters. Here it is pleasing to note that they cleansed and healed and saved the industrial and social life of Britain.

EXERCISES

1. Did the necessity of child labour justify it ?
2. Describe the chief features of a " new " industrial settlement.
3. What did " laissez-faire " mean (a) to the employers, (b) to the workers ?
4. How far was the breach between Capital and Labour an accident of the conditions of the time ?
- *5. Discuss " severe punishment increases crime."
- *6. Consider the effect of industrial conditions upon the Poor Law System.
- *7. Discuss the meaning of (a) Liberty, (b) License.
- *8. Why did population increase so rapidly in such evil conditions ?

CHAPTER IX

THE BEGINNINGS OF BANKING, CREDIT, AND CAPITALISM

THE beginnings of our modern system of banking, credit, and the origin of our modern capitalistic organization of industry and commerce are also to be found in this age. As all these developments depend absolutely upon money, the use of it, and the handling of it, we ought to begin this chapter by a short review of our monetary system.

MONEY.—Money is a *medium of exchange* and a *standard by which to measure value*. The old system of *barter* by which any amount of any commodity was exchanged for one amount of *equal value* of any other commodity was clumsy and inconvenient at its best. It weakened and collapsed when society grew large, and economic relationships naturally increased. Long before the period of vast expansion, industrially and commercially, we are studying, barter had been given up and in its place money was used as an instrument or medium of exchange.

Clearly any substance agreed upon by men could be used as money. Once its *standard of value* was established—the value and price of any commodities could be satisfactorily measured. Clearly also, what are known as “rare metals”—gold and silver—came to be used and accepted universally as money. Gold and silver were valuable, easily portable, very durable, and difficult to imitate. Coins struck

from both metals offered all the conveniences naturally demanded of money. This leads us to look at the English coinage.

Until the reign of Edward III (1327-1377) no gold was coined in England. Silver was used, and a pound weight of it was the *standard* of our currency. No coin of this weight was minted: containing as it would have done 5,400 grains it would have been too bulky. The silver penny containing $22\frac{1}{2}$ grains was our chief coin. Its value then, as now, was $\frac{1}{240}$ of a pound. During and after Edward III's reign the use of gold and silver coins went on side by side. The chief were the *noble* worth 6s. 8d. issued by this monarch; the *angel* worth 6s. 8d. issued by Edward IV (1461-1485); the *guinea* worth £1 1s. by William III (1689-1702).

Unfortunately, money in these days was much abused. Its metal had a *marketable value* as metal. So it came to pass very often that the coinage was *debased*, i.e., the coins would contain *less* metal than they ought on their face or nominal value. Needy monarchs would cause the coins to be clipped—so that more coins could be struck from the same amount of metal. Private persons clipped them as well and sold the fragments of the “precious metals” so stolen. Moreover, the coins were roughly made, unmilled, easily counterfeited. A large amount of spurious currency was, therefore, always in circulation. This “depreciation” or “debasement” of coinage was a most constant and vexatious problem to our Kings and Governments until the end of the seventeenth century. Its economic results were very serious. It severely checked trade: it caused prices to rise: it destroyed confidence and so restricted credit. Unless the Government maintains the *standard* of its coinage, it is bound to be a false or unfair *medium of exchange*. E.g., if I offer you five

pounds in settlement of a debt, and you know that the five pounds are not up to standard, *i.e.*, they are worth, say £4 16s. you would probably refuse such payment. Multiply this instance a million times and you will see what an enormous difficulty results from debased coinage in any state. Now, so bad had things become in 1695, that a resolute attempt was made to re-establish the standard of our currency. Montagu, the Chancellor of the Exchequer, called in the help of two celebrated mathematicians, John Locke and Sir Isaac Newton, and reformed our coinage. All old coins were "called in." After a certain date their use was forbidden. New coins were issued. These coins were of the correct metallic weight, well made and milled and properly stamped. On the whole this great reform was successful.

For economic reasons, however, depreciation in currency is bound to result if "*standard*" coins of both gold and silver circulate side by side.

This introduces us to the much discussed problem of *Bi-metallism*: *i.e.*, gold and silver coins both established as *standard values* at a fixed ratio to one another and legal tender to any amount.

Since Edward III, this dual system had been in use in England and Wales. In 1774 it was agreed that the only way to prevent "depreciation" was to adopt the single *gold* standard. In this year, therefore, the "demonetization of silver"—*i.e.*, the taking away of its *standard* value from silver coinage—was begun: silver was declared legal tender only up to £25. The final step was taken in 1816, when the sovereign was first coined. It was made the new gold standard. Not only was it worth 20s. face value, but *its metallic worth was 20s.* Since then we have used this single gold standard. Both silver and copper coins are merely token money, representing in *face value* fractions of a sovereign.

By law no more than £2 payment in silver coinage need be accepted.

Our modern sovereign weighs 128·274 grains—113·001 being of fine gold: the half-sovereign is in strict proportion. As soon as a sovereign is reduced to 122·5 grains or a half-sovereign to 61·125 by "fair wear and tear," they are officially withdrawn from circulation. Every effort is taken to safeguard and preserve this "mono-metallic" gold standard. On its security depends to an enormous degree the credit of the Empire. At the Royal Mint alone the coinage is struck: through the Bank of England alone is it first issued to the public.

Stress is laid here on the question of the single and twin standard of currency. Economists, statesmen, financiers, and business men, still dispute which is the better system. Many states still use the bi-metallic—*e.g.*, the U.S.A. Although it is purely an economic question and outside the scope of this "History," it is necessary you should know of it and study it if you can. Like the use of the metric system, it is a problem that must be solved in the future for the sake of international commerce—if for nothing else.

BANKING.—There were no banks or banking system in England before 1694, when the *Bank of England* was founded. Before this date the gold and silversmiths of London and other big towns were the "bankers": being rich themselves and possessing the necessary strong cellars in which to hoard bullion, specie, jewels, etc., those who thought it prudent to "bank" their money and valuables, left it in the safe-keeping of these gentlemen. Naturally, too, kings and others who needed loans raised them from the goldsmiths. The Stuart monarchs did so: Cromwell also followed their example.

From one such transaction, an event of the first

national importance resulted. In 1672 Charles II. who owed the goldsmiths the huge sum of £1,328,526 announced that he would never repay its capital, but would continue to pay the annual interest only upon it. This loan, therefore, became a permanent debt, for which the Crown was responsible. It was the beginning of our *National Debt*—i.e., money loaned to the State upon which the State pays an annual charge of interest. In 1677 interest on this debt was paid at 6 per cent. In 1701 only 3 per cent. was paid.

Once the idea of the National Debt was accepted the Government did not hesitate to make it an increasing fact in the national economy. Involved in continental war, it needed much money. So the scheme of enlarging the debt by new loans was adopted. In 1693 Montagu raised one "on the security of the whole nation" at 8 per cent. Later, he raised others at 6 per cent. and 5 per cent. In 1751, Pelham grouped all the various loans together and made of them one *Consolidated Stock* on which he paid only 3 per cent. Thus did the National Debt become a permanent feature in our national finance. In 1715 it stood at £17,000,000. In 1815 it had risen to £800,000,000. In 1919, it is over £8,000,000,000. These huge increases are the results of the vast costs of war-expenditure. The interest is an annual charge on the revenue derived from State taxation.

Mention of the National Debt is made here because the founding of the *Bank of England*—an event which marked the rise of the modern banking—is closely connected with it. In 1694, Paterson formed a company of London merchants to loan to the needy, war-burdened Government, £1,200,000 at 8 per cent. interest. In return the lenders were allowed the privilege of forming themselves into a Company

known as "The Bank of England." An Act of Parliament was passed which allowed this bank to receive deposits, to lend money at interest, *and to issue its own Bank-notes.*

This financial experiment proved successful. The interest was £96,000 : the Government added another £4,000 annually. The regular, State guaranteed income of £100,000 a year put the Bank on a sound foundation. People quickly realized the advantages it offered. They deposited their money and received interest : the Bank advanced loans to business men, and thus made trade and industry and speculative enterprise easier : it also issued its own *Bank-notes*—pieces of paper—which were accepted as equivalent money value to coin.

It is this note-issue that is really important. As you know, by far the largest part of our formal financial system to-day is covered by the issue, the use, and the honouring of "paper"—*paper as money*, as token money, as advices to pay, as promises to pay, etc. So tremendous is the need of money to-day that if coin were used solely in business transactions there would not be enough to go round or suffice for one two-hundredth part of the demand. The bank-note, the cheque, the dividend warrant, the receipt, the stock share, etc., etc.,—are all paper devices to relieve the terrific burden of modern demands on actual money.

The whole system of this paper finance is dependent upon the modern banking system by and through which it is worked. And the origin of it all is the right gained by the Bank of England in 1694 to issue its own notes—*i.e.*, pieces of paper the nominal value of which would be paid in coin on presentation and demand at the Bank. Until 1759, the smallest Bank of England note was £20.

The interchange of money was thus greatly assisted.

This is the chief point. The rapid interchange of money means the quickening of business. This financial change consequently exercised direct influence in the advance of industry and commerce. *E.g.*, the travelling merchant need no longer carry large sums of gold—which by reason of weight and danger of highwaymen were a worrying burden. He could, if necessary, carry his fortune in “paper.” He could go about freely and with less anxiety: and his going about meant *the spread and increased movement of business.*

Naturally then did the banking system quickly develop. The need was more banks—especially in the big towns and industrial centres. Unfortunately a grave misunderstanding arose, and for a time checked progress. The “Bank of England” was exceedingly jealous of its privileges. It tried to stop “rivals” in its own selfish interests. It claimed that its Charter gave it the sole right of “deposit banking,” *i.e.*, the right of receiving money on interest. This checked the founding of other banks in London until 1833. Then the error was exposed: then, too, other banks—“Joint Stock” banks—were started in London. If you look at the prospectus of any great London bank, you will see that it was founded at or about this time. These London “private banks” were not allowed to issue notes. Would-be bankers in provincial towns were not slow to oppose the Bank of England’s claim. In 1750 there were twelve banks outside London—a small number, but an evidence of the strong banking movement of the times. These banks claimed the right to receive deposits and issue loans at interest; they also successfully challenged the Bank of England’s monopoly of note-issue. Their action confined this monopoly to the area of London; and was, on the whole, exceedingly “good for business.”

When the industrial revolution was sweeping across the face of the land, the tendency to develop banking received tremendous impetus. The greater the facility of exchange, loans, credit, the better. Our financial system grew—quickly accommodating itself to the new order of things. Much money was in circulation—but not nearly enough. “Paper” was in ever increasing demand. Thus, during the last part of the eighteenth and the early part of the nineteenth centuries, many private banks were founded up and down the land—especially in industrial areas. Their note issues were accepted. But many of these banks were swindles; many were badly managed; many too were ruined by the sudden bankruptcy of their borrowers. Bank failures were frequent: acute distress was often felt in their localities. One bank, *e.g.*, issued £30,000 worth of notes on a capital of £600! The faith of the nation in the banking system was undermined by the reckless speculation and disastrous failure which marked it during this stage of its history.

In modern language we should say the “credit” of our financial system was undermined. This was a matter of great and grave importance. It ought to be closely understood. Business on a large scale is practically impossible if “credit” is not “good.” The fact that the banking system which had at first promised so much now seemed to be falling to pieces had the worst possible effect on commerce and industry. Enterprise was checked: fruitful speculation stopped; general business stability threatened; “bank-runs” were common; industrial “crises” occurred frequently and left long and wide trails of social misery behind them.

Another fact in this connection must be noticed. In consequence of the heavy drain of war expenditure and the Government’s stern need of gold, the *payment*

in gold of the Bank of England's notes was forbidden in 1797. This meant that this "paper" was *inconvertible* into gold—that this "paper" had to serve absolutely as standard coin. This course had been adopted before, in 1793: the result had then been panic, failure, and economic distress: on this occasion the same results followed. But the policy of "suspension of cash payments" was resolutely pursued for the course of no less than twenty-four years. Naturally, the Bank's notes *depreciated* in value: gold became so scarce that its value reckoned in paper money rose from £3 17s. 10½d. an oz. in 1796 to £5 5s. in 1814. Only in 1819 did Peel order a slow resumption of cash payments.

Thus was credit directly affected and weakened at its headquarters—the Bank of England—the Bank of the Government. This weakness, as already shown, spread throughout the whole banking and financial system of the country. "Convertible" paper became "inconvertible:" it fell in value: faith—the chief essential of credit—waned; the mighty machine of industry so recently created by men could not, however, be stopped: it was far too powerful: it did not run smoothly; it got out of control: it jolted along, and where it was going none quite knew; the necessary "financial oil" was getting scarcer and scarcer.

After Waterloo and the Vienna settlement of Europe (1815-6), the state of things on the whole improved. But several industrial and financial "crises" of the first order were experienced during the period 1821 to 1844. Governmental action was made necessary; and in 1844, a determined effort is seen to reform the financial and banking system on sound and lasting lines.

In this year the *Bank Charter Act* was passed. It took away from all banks founded outside London

after 1844, the right to issue notes : it ordered those founded *before* 1844 to issue no greater amount of notes than the amount they issued before the Act. The Bank of England note-issue was placed under severe restrictions. It could issue £15,000,000 in notes without covering them with gold, but it had to keep in reserve that amount of "securities," (*i.e.*, stocks easily saleable) to cover them. Above these £15,000,000 every fresh note had to be guaranteed by a *gold reserve*.

This Act was successful in its main object : it restored faith in the Bank's ability "to pay"—if necessary. It also taught men to trust the Bank's note issue, rather than the issue of private banks. In time, therefore, the latter began to drop off and cease their issue—relying on their ordinary banking business for their profits. This allowed the government to increase the Bank's issue without gold reserve to £17,000,000 ; and slowly the Bank became the centre, not only of the banking system, but of the whole national system of credit itself. Other turns in fortune's wheel were to affect this big financial reform—other ups and downs in our national economy were to be experienced—but these we shall deal with when we describe the next period. Here it is enough to see the modern banking system strongly founded with the Bank of England as its centre piece, and that it was an indispensable part of the entirely new economic organization of the State that had been developed during this age.

CREDIT.—From what has already been said the nature, the work or function and the necessity of *Credit* have perhaps been made clear. Credit is an inseparable element in modern banking and commercial systems. Its growth was natural and inevitable : it was but one more economic fruit of the "revolutionary movements."

In essence it is just the belief that the Government, the banks, and business men generally could and would pay their debts—within a time limit, if necessary.

In business it is essential to save as much time as possible ; to save the trouble of passing about actual metallic money, if possible ; to safeguard security by allowing a period in which to settle a deal. These essentials rest upon the principle of credit : they are also made possible by the use of paper money. In the use of paper money lies the sure test of credit. If credit is sound—"paper" is good : and vice versa. If credit is weak—"paper" is apt to depreciate.

Take an example : *A.* is a merchant whose business is prosperous : he wishes to extend his operations but has not sufficient capital : he goes to his bank and applies for a loan of £5,000. His "credit" is sound : it is represented by his business : the bank lends him £5,000 *believing* that the *security* he offers is good for the amount. They place £5,000 to his account—merely a matter of writing down figures. *A.* then draws either by cheques or by Bank of England notes, whatever sums he wants at any time from the £5,000. He pays these away : those who receive them pay them into their banking accounts. So far only "paper" has been used. The banks adjust the matter between themselves, also by "paper." Thus, practically speaking, very little coin—if any—is used, its trouble and burden avoided, a lot of time saved, and "business needs" satisfied in this transaction : it rests absolutely on the *belief* that all concerned can pay their obligations when called upon to do so—ultimately, of course, in the cash, if need be, held by the original bank who lent the £5,000.

Multiply this instance a million fold and you will then get an imaginative picture of the colossal edifice

of credit existing at present in the industrial and commercial spheres of every modern State—and in every case it rests on the small foundation of the *gold reserve* at the State's command. It is a wonderful system—so elastic, so sensitive, so slender, and yet so firm. Without it the modern system of capitalized industry and commerce would be impossible. And it originated in its modern sense and function with the rise of the banking system during this period.

CAPITALISM.—As in Chapter XVI the rise and development of the capitalistic system will be discussed, it is only necessary to mention here that it originated in these days. It was also a fruit of the “revolutionary movements.”

The expansion of Industry demanded operations on a *large scale*. This involved a big initial outlay—more in all probability than one man could afford. It was, therefore, necessary to interest others in his venture. Several—maybe many—would put their money or credit together to finance the undertaking—on the understanding that they would share the profits. These people “capitalized” the new business—they subscribed the “capital” necessary to start it.

If, now, you can imagine the rapid development of the textile trade or the iron or mining industries, the rapid building of the mills, the eager enterprise in sinking mines, the quick extension of a merchant's business to accommodate and profit by the new and vastly increasing “output,”—you will realize that *capital* was necessary and had to be found. Of the thousands who profited by the new state of things, most were able to save. Money hoarded, however, was barren. Money will yield money if put to its proper use. This simple lesson was learnt by this age. Savings were “invested.” The result—in the long run—was Capitalism.

BANKING, CREDIT, AND CAPITALISM 101

EXERCISES

1. Discuss the use and necessity of money.
- *2. Why is Bimetallism an important controversy ?
3. The advantages and disadvantages of banking in this period.
- *4. The theory of interest and the question of usury.
5. Define credit. Why was its development unavoidable ?
- *6. Discuss the necessity for, and the results of, The Bank Charter Act, 1844.
7. Why does a government conserve gold in war-time ?

CHAPTER X

THE "HUNGRY FORTIES" AND THE FIGHT FOR FREE TRADE

THE struggle to secure the Repeal of the Corn Laws was one of the sternest political struggles ever waged in Great Britain: its economic results were also of the highest importance. The policy of Free Trade finally won its long battle with the policy of Protection: after seventy years' contest Mercantilism was destroyed by *Laissez-faire*. This chapter will review the last phase of this historic event.

INDUSTRY AND COMMERCE.—In industry and commerce generally the policy of *Laissez-faire* was accepted before the end of the eighteenth century. The Government was anxious to assist its development, and good progress was made.

William Pitt, the great statesman, was a keen student of Adam Smith's book, *Wealth of Nations*, and a firm believer in the doctrines of Free Trade it advocated. He lost no chance of introducing them into his Budgets and his general financial policy. *E.g.*, in 1785 he reduced the duty on tea from 50 per cent. to 12 per cent. In 1786 he obtained a general reduction of duties. In the same year he made the famous Commercial Treaty with France—each country promising to lower its tariffs on the goods imported from the other.

Pitt also succeeded in establishing a sound system of *excise*. This applied to tobacco and wine—and

was simply as follows :—these commodities came into our ports free of customs duties, but were sent at once into "bond"—*i.e.*, large warehouses under the control of Government officials; only when the owners removed these goods from "bond" to be sold at home, were they subjected to tax: if they were removed to be exported—*i.e.*, re-shipped for foreign ports—they were free of "excise duty." This system was welcomed by all concerned. It helped business.

Again, in 1796, the Navigation Laws were relaxed in favour of the U.S.A.

The Napolconic Wars, however, placed severe checks upon the continuous development of this policy. Anxious as all political parties were "to set free" both industry and trade—except in the one matter of corn—war necessities did not allow it. In 1809, 10, and 13, preference was given to the import of Canadian timber over that from the Baltic countries; and in 1813 trade to India was thrown open: but these measures were the only important advances during this period in the progress of Free Trade.

After the war this policy was again vigorously taken up by the Government. This renewed action was largely the result of the famous *Petition of the London Chamber of Commerce* (1820) against all commercial restrictions: we referred to this in Chapter VIII. This petition revealed the spirit of the times. The most influential of industrial and trading interests were behind it. Consequently, in 1822, Huskisson passed an Act by which the import duties charged by us on foreign goods were made the same as those which foreign countries charged on our goods going into their ports. Duties on wool, silk, and timber were especially reduced. A Bill was also passed allowing our colonies to ship their

produce direct to foreign ports in Europe instead of sending first to England. American goods were now allowed to go to American ports in American ships. In 1824-5 more reductions in our tariff-lists were made. In 1825 foreign goods were admitted to English ports, if they came in vessels belonging to the country which produced the goods. Thus was *Laissez-faire* gradually winning its fight.

The second ministry of Sir R. Peel (1841-6), however, sees the most important changes in this direction. He it was who introduced the so called "Free Trade Budgets." At this time, the "Free Trade Movement" was growing enormously strong: ably organized and led by such eminent men as Richard Cobden and John Bright, its influence on current politics was tremendous. Peel at once announced sweeping alterations in the tariff. He limited the duties on raw materials to 5 per cent., on partly manufactured articles to 12 per cent., on manufactured articles to 20 per cent. of their value. In all, 750 out of 1,200 articles on our tariff lists were affected. He also reduced the duties on imported cattle, fresh and salted meat, butter, vegetables, and foreign and colonial timber. In reply to those who opposed these changes he said that he probably had not "gone far enough in *concession*."

His second free trade Budget came in 1845. Duties on raw materials were further lowered and on articles of general consumption, especially sugar. Cotton was allowed to come in free—a great triumph for the Manchester School. All duties on British exports he abolished. And no less than 430 articles disappeared from the tariff lists. In 1846 only tallow and timber remained as "raw materials" which were subject to an import duty: these eventually were given up.

Later, during the Gladstone period, 1853 onwards,

the remaining customs were gradually reduced—until "free import." was practically established.

CORN.—So far we have restricted our account to industry and commerce. As the vast majority of the nation wanted these changes they were made without undue difficulty. In the sphere of agriculture, however, the case was entirely different. The Protectionist party were firm in their claim to tax imported food—especially corn—so that home-producers might profit. Generally, however, they had to give way on all "food-substances" except corn. Corn—the most important item for the people—was also the most important item to them. They fought like lions to prevent its free import, even though it was clearly and sadly proven that the nation was "hungry," and that the farmers and agricultural interests of the country were unable to supply sufficient for our needs. Thus we come to consider the historic political battle for the *Repeal of the Corn Laws*.

In Chapter VIII mention was made of the Corn Laws. Here it is first of all necessary to see the policy of the Government in *protecting* corn.

The result of the Agrarian Revolution was that agriculture prospered. Realizing the need of feeding the ever-growing population, the Government did as much as possible to encourage the production of corn. Realizing also that the home grown supplies might fail, or at the best be insufficient for the nation—it had to allow the *import of foreign wheat*. Naturally, home agricultural interests were hostile to the import of these foreign supplies: they wished to have the monopoly of the English corn-market. Consequently, the Government imposed a *prohibitive import duty* on corn. On the other hand, when home grown wheat did not reach 48s. a quarter in the market, the Government allowed the producers a *bounty* of

5s. Thus was the price of bread always kept up artificially. The poor felt the burden: the corn trade prospered. Loud was the outcry: trouble brewed constantly: waggons carrying corn were often attacked: riots, pillage, and loss of life commonly occurred.

Although changes were from time to time made in this protective policy, the inflation of the price of wheat was consistent. The stress of the Napoleonic Wars increased the general social misery—and bad harvests occurred with unpleasant frequency. More and more wheat was produced from the new farming system (1800-1826): but the increase of the people was so rapid that the demand more than kept pace with the bigger supplies, until at last we were forced to depend in an ever-growing measure on foreign supplies.

In 1815 the protective policy reached its most stringent limits. Import of foreign wheat was forbidden until home wheat was at least 40s. in the market. This state of things could not last; opinion up and down the country became inflamed—especially in the industrial areas where masters sided with men in demanding cheaper corn—on the principle that cheaper corn meant cheaper cost of living and, therefore, a lower rate of wages.

In 1826 on account of long drought and fear of bad harvests the Corn Laws were suspended. This brought for a time the needed relief—but at once strengthened the opposition of the big agricultural interests. In 1828, therefore, a new system was devised by Wellington's Government. This was a "sliding scale" of protective duties—a tariff system by which the duty on imported corn was raised or lowered according to the price of grain in the home market. This was but an amendment for the better of the old policy. It served on the whole fairly

well: it could not, however, prevent the recurrence of hunger and distress at times of shortage. Generally, prices ranged high—very high. This especially was caused by the reduction in the home supplies (1826-46). Fiercely hostile to any foreign competition, big landlords preferred to let their land "go out" of cultivation. Moreover, at this period land was becoming valuable for another purpose. The mere possession of land was being sought for its *political* power, by those who had made fortunes in industry. Thus land was sold at big figures—and most of this land ceased to be agricultural in the true sense.

Naturally, the movement to repeal the Corn Laws grew more powerful every day. In 1836 societies were formed to protest against them. In 1838 the famous Anti-Corn Law League was founded at Manchester. Its name tells its purpose. Rapidly did it gain an enormous power. Money poured into its treasury: throughout the land its propaganda spread; its organization was strongly ordered: it was supported by the great industrial interests of the North, the Midlands, and the South-west. In the large towns and cities it made rapid conquests. Many able men were enrolled among its leaders: far the most prominent, however, were Cobden, the economist, and Bright, one of the best orators our nation has ever bred. Both these men entered Parliament with the avowed intention of securing the Repeal of the obnoxious laws. In the end, as we shall see, this mighty League won its purpose.

So disturbed was public opinion, and so bad was the general distress, that in 1842 Peel, the leader of the Government, relaxed the corn duties. This followed an unsuccessful attempt of Lord John Russell, the leader of the Whigs, to substitute a *fixed* duty in the place of the "sliding scale." Peel's relaxation

was as follows : when wheat stood at 50s. the duty was 20s. ; when it stood at 65s. the duty was to be 7s. ; at 73s. it was to be 1s. He refused further concession.

As we saw, Peel was the enlightened leader who was mostly responsible for the introduction of free trade principles into our fiscal policy so far as commerce and industry were concerned. In the matter of corn, however, he was *at first* opposed to free trade. He was the leader of the Tory party—the party largely representative of landed and agricultural interests—and true to his political faith and pledges, he could not desert protection of agriculture.

Now, the story of the Repeal of the Corn Laws is famous at least for the conversion of this illustrious statesman to the principles advocated by the Anti-Corn Law League. In the end he did actually secure the Repeal. In doing so he sacrificed his political career—but ennobled his name for ever. Charged with the betrayal of his party and his high trust as its leader, he left political life : yet in the history of our State he stands prominently among the elect who have put the needs of the State before the needs of either party or self.

Peel's conversion was not sudden. He had faced the grim problem of the Corn Laws for years. The conviction that they had to go gradually strengthened itself in his mind as the tragic course of the "Hungry Forties" was run.

The crisis came in 1845. There was a very bad harvest. Worse still, disease appeared in the potato crops : in Ireland this was so severe that potatoes entirely failed. The dread spectre of famine drew quickly near—eager to stalk the land. Peel decided for wholesale reform. He met his cabinet and laid before them his new policy. He could not secure their agreement. Frequently they met, but with the same result. The nation waited—almost with bated

breath. Seizing his chance with great skill, Lord John Russell, the Whig leader, suddenly announced his own conversion to Free Trade and his resolve to secure the Repeal of the Corn Laws. This new policy of the Whigs was made known in the famous *Edinburgh Letter*, written by Russell from Edinburgh, and published in the *Times* on November 27th: "Let us," he wrote, "unite to put an end to a system [*i.e.* protective] which has been proved to be the blight of commerce, the bane of agriculture, the source of bitter divisions among classes, the cause of penury, fever, mortality, and crime among the people. . . . The Government appears to be waiting for some excuse to give up the present corn law. Let the people by petition, by address, by remonstrance, afford them the excuse they seek." This letter was a political thunderbolt. Until its publication the Whigs had in company with the Tories also kept a watchful eye on agrarian interests, and were not very far behind the Tories in the policy of restriction. Now they were "converted," and their first objective was the Repeal.

Unable to get the support of his party Peel was forced to resign. Queen Victoria called upon Lord John Russell to form a Government. He was unable to do so—for his party was politically weak in the House. In January 1846 Peel was, therefore, invested for the third time as Chief Minister. He formed a cabinet agreeable to his proposals. Then he faced the giant task of convincing his own large party of the need for his drastic proposals, and of carrying them through the House. He succeeded.

Complete abolition of the Corn Laws would have meant a disaster to home agriculture. Peel's Act, therefore, was wise in securing their gradual withdrawal by means of reduced duties until February 1st, 1849, when their abolition would be final. From

that date only a nominal duty of 1s. was imposed. In 1860 Gladstone put an end to this.

Thus did Peel make the final breach in the walls of restriction. His policy of Free Trade resulted in the immense expansion of commerce, the revival of industrial enterprise, and a rapid increase in production and national prosperity. From 1842-5 our foreign trade increased by 25 per cent.—the value of exports rose from £47,250,000 to over £60,000,000. Wages improved, unemployment was small, food supplies became more plentiful. The enormously powerful weapons of cheap “raw materials” and cheap food were finally placed in the hands of our industrial nation: the result was an industrial growth during the next twenty years which far exceeded the dreams of those whose wide experience in the “new conditions of things” enabled them to see visions of gold and commercial prosperity.

EXERCISES

1. Why were the Corn Laws retained when other fiscal “protections” were being given up?
2. What is the difference between “Customs” and “Excise”? Look up Whitaker’s Almanack for the amounts raised under each last year.
- *3. How far did political events hasten the Repeal of the Corn Laws?
- *4. What is a sliding “scale” in tariffs? Give other instances of the adoption of this economic expedient and discuss its success.
- *5. Is the taxation of “the necessities of life” justifiable?
6. Summarize the causes which resulted in “Free Trade.”

CHAPTER XI

THE "FACTORY ACTS"

THE year 1833 will always be memorable in the history of our industry. In this year the first big attempt to reform the conditions of labour in the factory system was made. From this date even to the present day the reform of industrial conditions generally has steadily advanced. To-day things on the whole are very satisfactory. The worker lives and labours in a paradise, if his conditions be compared with those of his fore-runner who toiled at the beginning of the nineteenth century. The high standard of control which is *now* officially demanded in almost every industry, in order to safeguard the health and promote the welfare of the workers, is the result of this century of unchecked progress. It is interesting as well as necessary to know the chief stages of this long movement of reform.

In Chapter VIII we briefly glanced at the terrible conditions existing both in the new "factory" organization of labour and in the coal and iron trades. Their existence and continuance were largely the result of the rapid and natural growth of the "revolutionized" industries: the stern race for success among the new master class caused them, to seize any means which gave them temporary or permanent advantage; and, clearly, they did not hesitate to avail themselves of such facts as "the freedom of contract," the "labour market," the cheap labour power of women and children, and the desire of hard

hearted parents to make their children "wage-earners" as soon as possible. Moreover—and this ought to be remembered—news travelled very slowly then. The suffering and degradation of working either in factory or mine were not known to many people who lived *outside the industrial area*: in other words it necessarily took a long time for *public opinion* to be informed on these matters: when, however, the general body of the people knew the true state of things, it was not long before determined efforts began to be made to remedy them. These efforts to secure reform naturally came to the notice of Parliament. Naturally, too, it was by parliamentary action only that the reformers could be successful; for Parliament alone had powers great enough to compel the employer to improve conditions of labour.

By the great Reform Bill of 1832 Parliament had been considerably altered for the better. In 1833 the "first reformed Parliament" proved that it was thoroughly alive to the serious problems created by the "new industrial era" and, in particular, by the factory system; it was filled with the spirit of reform; its first desire was to do something at least "to raise the fallen and lift up the oppressed." So it came to pass that this parliamentary session saw passed the two great "philanthropic" measures—(a) "an Act for the abolition of slavery throughout the British colonies;" (b) "*An Act to regulate the labour of children and young persons in the mills and factories of the United Kingdom.*" The latter was the famous *Ashley Factory Act*—the first in the long series of Factory Acts which make up so splendid a record of industrial legislation during the nineteenth century. Prior to this Act the small commencement of this great reform can be traced. In 1802 the elder Sir Robert Peel, who was himself a rich cotton-mill owner, passed the

first Factory Act through Parliament. Twelve hours was fixed for the day's toil for children—"apprentices": night work was forbidden them. The factories too, were ordered to be whitewashed and properly ventilated.

As this reform movement grew it was seen to gather strength from two distinct sources. The workers themselves by every means, legal and illegal, open to them, tried to force public attention to the bad state of things. On the other hand, there appeared at this time a small but noble band of gentlemen, who, aroused to the need of action by their sincere desire to lighten the load of suffering borne by the children and women in industrial life, devoted their energy, time, and money to this philanthropic cause. Foremost among these is the great Lord Ashley, later titled the Earl of Shaftesbury. As a school boy, he was horrified at the treatment of the pauper class, and determined to spend his life to redeem the lot of the poor. At Eton College there is still seen a tablet bearing the words "Love—Serve," which commemorates his noble work and character. Michael Sadler, Richard Owen, and Richard Oastler also merit our grateful remembrance for the big part they played in this agitation. Owen, who was also a mill-owner, published a book in 1816 which disclosed the conditions of factory life. So impressed was Sir Robert Peel that he set up an official commission to enquire into the real state of child labour. The result was the next Factory Act, 1819, which prohibited the employment of children under nine years of age, and extended the 1802 Act to all "cotton mills."

Unfortunately both these Acts failed. No inspectors were appointed to see that their provisions were carried out. Child labour was too cheap, and so necessary for running the mills that employers

paid little or no heed to the Acts of Parliament. The matter was too grave to be left alone, however, and in 1830 Oastler and Sadler opened a big and ordered campaign against the whole factory system. They were very successful in arousing public opinion ; and, at length, they got Parliament to appoint another Committee of Enquiry. This committee quickly got to work. The evidence it collected was so strongly in favour of an urgent measure of reform that Lord Ashley at once drew up a bill making it illegal to employ *any young person under eighteen years of age for more than sixty-nine hours a week in factories* : it prohibited altogether the employment of children under nine years of age : children under thirteen could only be employed eight hours a day : and it provided for the appointment of inspectors.

Fierce was the fight for this Bill. The labour of "young persons" was necessary for the successful running of the factories—so the Lancashire members argued. They challenged the evidence of the Sadler Select Committee, and caused a Royal Commission to be set up to make a new investigation. In the main, however, the Royal Commission quickly confirmed the findings of the committee. On every ground—especially the moral ground—the Bill was justified : so it passed into Law (1833).

The "interference of the Government" in the ordering and organization of labour and the conditions of its work had re-commenced after a period of eighty years' "absolute freedom." *Laissez-faire* in industry had received its first effective restraint. The appointment of inspectors made the administration of this Act a necessity. The result was a slowly increasing improvement in industrial life.

From this time onwards "the condition of the people," as Disraeli termed it, demanded the careful attention of Parliament. There was certainly a real

desire "to improve the surroundings and the morals" and conditions of labour of the working classes.

In 1840 Lord Ashley secured the appointment of a Commission to enquire into the *employment of women and children in the mines*. This investigation was pretty thorough, and in two years the Commission issued its first report. It was an "awful document," it roused feelings of "terror, shame, and indignation." It proved beyond doubt that children as young as six years were employed in terrible conditions—that "health, morals, and education were totally neglected."

Ashley at once introduced a Bill to forbid women working in the mines, and to make thirteen the lowest age limit of mine "children." The opposition of the "coal interests" was so strong, however, that he was compelled to accept an amendment to the effect that "boys often could be employed three days a week." Yet this was a big step in the right direction. Women were excluded from the mines, and child labour was now at least regulated to some extent in both factory and mine.

THE "TEN HOURS DAY."—The years 1843-47 saw the memorable struggle in Parliament for "the principle of the ten hours." The reformers, led by Ashley, tried again and again to pass a bill to fix the daily hours of labour for "young persons and women" employed in factory life at ten. Genuinely alarmed at this proposed drastic interference with the working of *laissez-faire*, and convinced that it would "end in disaster to the community," the majority in Parliament opposed it. The reformers, however, now won the political help of "the Young England" party; such able men as Disraeli and Lord John Manners gave them powerful public and parliamentary support. The publication of Disraeli's *Sybil* in 1845 also made a profound effect on the feeling of the upper and

middle classes. In it he stated that he had had to write of "dreadful" things, but many facts remained which even he had not dared to disclose.

The "ten hours" Bill was yearly pressed. In 1846 it was defeated by the narrow majority of ten. But on May 3rd, 1847, it secured the majority of sixty-three on its third reading and had passed its critical ordeal in the House of Commons. It went up to the Lords and was passed easily. By its terms the work of "young persons" under eighteen in textile factories was limited to ten hours a day, or fifty-eight in any one week, between 5.30 a.m. and 8.30 p.m. It also prohibited their working on Saturday afternoons.

Thus did the principle of a "ten hours day" win parliamentary sanction. So vital a change was bound to conflict with the interests of the employers of labour. Their resistance was secret and clever. A system of labour by "relays" of employees was at once introduced: carefully organized, it became a very successful way of evading the provisions of this Act, and of baffling the Government inspectors when they visited the mills, and of thwarting the magistrates who were responsible for the punishment of employers who disregarded the Act. This device was after a few years exposed. And in 1850 it was enacted that the "legal working day for women and young persons" lasted from 6 a.m. to 6 p.m. with one and a half hours for meal times.

At this stage of its progress this movement of reform rests for a long time. It is content to reap the fruits of its victory—a great victory under the circumstances—of securing the "ten hours day" in principle for women and young persons, although in fact their daily labour was regulated at ten hours and a half.

Nothing so far had been done to improve the lot

of the men. Parliament could not face this big question. State interference on their behalf would have destroyed the current notion of *freedom of contract*, which was the heart of the *laissez-faire* system in industry. Public opinion was not ripe for this : nor were our economic or industrial conditions. The rough sympathy of the age was given wholly to the women and the children, who were now looked upon as too "weak" to exercise responsibly their "Freedom of Contract." Government interference to protect them was, therefore, justified. Men, however, were regarded as "strong" enough *individually* to insist on their economic rights in their freely made "contract" with their employer.

The education of public opinion on this matter was now vigorously adopted as a policy of labour. Trade unionism already existed ; at this time it began to assert strong influence in the industrial sphere. With the big and quick development of labour as an organized force resolute to secure better terms and conditions of employment, Parliamentary action was needed and directed in regulating labour. Thus, we find many small bills passed from time to time, each bringing about some small reform, such as the fencing of machinery, or the provision of more windows in factories, or the insistence upon sanitation, etc. ; and the extension of the principles of the 1847 Act to many other trades (1860-4).

Particularly noteworthy is the 1867 Act which considerably extended the restrictions that had already been placed on the employment of women and children "in dangerous trades." This Act also re-organized the system of Government inspection of factories. Before this, inspectors had little power and were more or less negligent. With increased powers, they now proved their usefulness in securing a more wholesome obedience to the Factory Acts.

Most important, however, is the famous Cross "*Factory and Workshops Bill*," 1878. This embodied within one Act the provisions of no less than forty-five earlier Acts, the purpose of which was to regulate life and conditions in factory and workshop. It is a prominent and well-known mark in labour legislation. Both women and children received further protection. Children were to work "half-time" only, *i.e.*, in the mornings or afternoons or on alternate days; they were not allowed to clean machinery in motion. Meal times, holidays, safeguards against accidents, sanitation, inspection, etc., were all fully dealt with and legally ordered. At last a "child" was defined as anyone under fourteen, and a "young person" was under eighteen years of age. The great majority of these forty-five Acts were minor bills passed between 1860 and 1878—an important evidence that the Trade Union Movement had succeeded in securing the aid of the State to check the worst forms of *laissez-faire* in industrial life. And, here it must be noted that this movement of Reform is no longer directed by philanthropists of the Oastler type: it is organized and directed mainly by labour itself through its powerful trade and political unions.

To make industrial conditions healthy by means of securing proper ventilation, scientific sanitation, adequate "fencing" of machinery, and by the reduction of hours and the increase of wages—these were the main objects of organized labour. Gradually, these essentials were won. Not, however, until the end of the last century and during our own age have they been fully gained. The last step, therefore, in Factory Legislation, is really the most important and must be left to a later chapter.

Here we will stop, at 1891. In this year an Act was enthusiastically passed by Parliament which reaffirmed the daily ten and a half hours for women

dealt a severe blow at sub-contracting and "sweating" practices, *raised the lowest age limit to eleven for children in factories*, and rigorously enforced the various sanitary arrangements and health precautions.

THE "EIGHT HOURS DAY."—Already the principle of the "eight hours day" had been born: it was the theme of discussion and the food for public agitation: it was destined to rival the principle of "the ten hours day" as a centre around which the labour movement was to rally for reform. The battle for it was also to be long and bitter. Two generations had to pass before it was accepted by the Government as a condition of industrial life. The last chapter in this story of reforming the factories is therefore as important as the first, although it cannot happily be said to appeal to our sense of pity rather than to our idea of justice.

EXERCISES

1. The meaning and scope of Factory Legislation.
2. Why did the "Manchester School" oppose this reform?
- *3. Discuss the utility of "government inspection."
- *4. Read Mrs. Browning's poem, *The Cry of the Children*, and Disraeli's *Sybil*, or Mrs. Gaskell's *North and South*, and estimate their value as "historical evidences."

CHAPTER XII

THE REFORM OF THE POOR LAW

POVERTY is a social evil. The existence of a class of destitute poor in any state at once creates a serious problem of government. The welfare of the State and the happiness of its people cannot be safeguarded unless this evil is promptly and firmly dealt with. We realize this truth to-day. Hence, the elaborate Poor Law Administrative System at work throughout the land. In the olden days, however, the evil of poverty crept into society and injured the State before its danger was properly understood by our governors. Thus, in course of time, it grew until it became a distinct menace. Then measures "to relieve" its burden and woe were taken. But they came too late. The evil had sunk its roots too deep into our social life: despite all efforts to destroy it, it still exists and grows like some poisonous weed if the necessary precautions are neglected.

The great economic changes and shifting of the people during the reformation period (1500-1600)—the partial break up of the old land system and social organizations, the destruction of the monasteries and guilds, the confiscation of their wealth, the widespread practice of enclosure that took place—all resulted in the creation of a large mass of destitute and poor at the bottom of our social scale. The small towns of the period could not absorb all the rural population that sought refuge in them. Trade was good, but the displacement of the population .

caused far reaching distress. Unemployment increased in towns: beggars roamed over the highways and by-ways of England. Vagabondage became a "trade." Leaders organized the "sturdy beggars" into gangs and small armies which terrorized countryside and small towns. Within a generation, pauperism—almost unknown before—became a mighty national evil which could only be cured by strong government action.

The first attempts to cure it failed badly. The action of the Government was "strong" enough to be called "inhuman and brutal," but, as it was the wrong sort of action, it did not relieve the State of the new pauperism, but rather increased it. The helpless poor were given a licence to beg: the strong bodied vagrants were whipped at the cart tail, and sent back to their own parishes. Sterner measures followed. In 1547 if anyone offered a "sturdy beggar" work and he refused it, he was to become the slave of the man who offered the work. If he ran away he was to be branded on the forehead with a "V." The "slave's" second attempt to escape was to be punished with death. Changes were made under Elizabeth—but scarcely for the better. In 1572 vagabonds were to be well whipped and their right ears pierced with a hot iron. If escape was attempted cruel punishments were earned—at the third time death was the legal sentence. Naturally, the "sturdy beggar" was made a terror to society. He was outlawed, and, carrying his life in his hands, he thieved, plundered, and killed, if necessary, to save his own skin. Not until the end of Elizabeth's reign (1603) did the problem of the able-bodied vagrant cease to be alarming. By that time, however, a century had almost passed since the great economic disturbances already mentioned had taken place, and society had again become fairly settled;

besides, trade and work had increased under Elizabeth's prosperous reign, and gradually the poor but healthy "out-of-work" had been re-absorbed into industrial life. Only the "incorrigibles" remained: they always did until recent times, but the terrible laws against highwaymen and footpads dealt with them.

So much for "sturdy vagabondage"—an evil fortunately almost absent in modern days: the healthy tramp and "won't work" are its only representatives to-day. But genuine poverty and helplessness through sickness, etc., is quite another kind of pauperism and needs quite different treatment. This type is still largely with us.

During the Tudor period licences to beg were allowed to those thousands of poor wretches; and people were exhorted to give freely of their alms to the Church for the sake of relieving this form of social distress. In Edward VI's reign two officials in each parish were appointed to collect funds for this object. Anyone refusing to give was to be dealt with by the law. But this compulsory almsgiving failed to meet the widespread need of relief. The generosity of the charitable was grossly abused. A system of relief in which the financial burden was fairly divided amongst the parishioners was loudly demanded.

ELIZABETH'S POOR LAW, 1601.—In 1601 the famous Poor Law of Queen Elizabeth's Government appeared. It is the basic Act upon which the whole vast system of our modern Poor Law system is based. It is, therefore, important. Its provisions were few—but very direct. (a) It levied a poor law rate in each parish: to pay it was compulsory. (b) Overseers of the poor were appointed in each parish who were (i) to collect the poor-rates; (ii) to relieve poverty; (iii) to find work for the workless; (iv) to apprentice their children to some trade.

This system was strong enough to stand the test of time. It answered its purpose well. Not till 1662 was any change made. Then the famous *Settlement Law* was passed by which no worker could leave his native parish to seek work at better wages elsewhere—unless he could give satisfactory financial guarantees that he would not be forced to “go on the rates” of his new parish. Ordinary labourers could not give this—and so were really “bound to the soil” of their birthplace as fast as any villein of the middle ages. This Act was an example of feeble government. It led to evictions and the deliberate destruction of small cottage property by the big landlords of the country: they paid the poor-rate, and their idea was that if there were no “poor men’s houses there would be no poor men,” and no rate to pay. So this vicious depopulation and destruction continued. Despite this development, it can be said that by 1720 to 1740 the Poor Law system was sufficiently strong to serve its purpose successfully. The problem of the poor and the evil of poverty were kept well in view and firmly handled.

Then—alas! for the Poor Law!—there came the complete “overturn” of society by the Industrial and Agrarian revolutions. Sweeping tumultuously through the length and breadth of the land, these mighty movements destroyed the old order and created a new. From our reviews of the period it is clear that entirely fresh social and industrial problems of urgent nature and national influence were soon created. And it cannot surprise us that the old Poor Law system was wrecked and well nigh broken to pieces in the general confusion of social destruction and reconstruction. It was indeed a critical stage in the history of the Poor Law administration. The rush to the towns and the “new” areas, the presence and menace of *massed* unemployment, starvation,

destitution, the small *real* wages, the high cost of living, the increase of rents—were chief among the economic causes of this social crisis of an *unprecedented demand* upon the services of the Poor Law. The most important cause, however, must be noted separately. This was the sensational increase in population. About 6,500,000 in 1750, its numbers in 1801 were roughly 9,000,000 ; in 1811, 10,000,000 ; in 1821, 12,000,000 ; in 1831, 13,000,000 ; in 1841, 15,000,000 ! And it was shifted—*massed* into certain areas. The population was now distinctively urban—*i.e.*, artisan—and had to work to live : driven from the *land*, it found the necessity to live in *town* conditions very much harder. Yet, the distress prevalent in the towns did not exhaust the problem : the countrysides were severely afflicted too. Agricultural labourers were hit hard by the loss of their domestic industry and the new farming system. Wages up to 9s. a week were insufficient to keep them and their families from semi-starvation. Moreover, many thousands lingered on their way to the towns—they had to tramp it—and became, through exhaustion, chargeable to the rates of a strange parish. Or, if *they* did not, their wives and little ones did. To sum up, there was an enormous and universal rush to gain help from the Poor Law in both town and country parishes. The result was appalling. Reform, expansion, and reorganization of the Poor Law system became a crying necessity. Little or nothing was done until matters were indescribably bad : then something was done—an historic event—*which made matters worse* ! This was known as the *Speenhamland Act of Parliament*.

In 1782, the Gilbert Act forbade the admission of the able-bodied into the workhouse, and declared (in defiance of experience and economic fact) that work must be found for the poor near their

homes and that if the wages paid were insufficient they were to be *increased by doles paid out of the rates*. Justices were to enforce these provisions. This was bad enough: the Speenhamland decision was worse—and followed directly, as a consequence from the Gilbert Act. In 1795 the magistrates of Berkshire met at Speenhamland; after examining the state of the poor in their area they declared that the poor could not live on their wages (which were on an average about 9s. a week), and that if farmers and employers did not increase the pay of their workers to enable them to live decently, they themselves would grant the necessary financial help to the poor *out of the rates*—i.e., *wages were to be supplemented out of the rates* on the principle of the Gilbert Act. They fixed the amount they thought would support a poor man's family according to the number of his children—and expected employers to pay such wages. So successful a solution of the Poor Law problem did this seem to the magistrates, in the south at least, that the Speenhamland decision was accepted and enforced by them. It seemed an excellent idea to make employers responsible for the relief of poverty among workers. But the results of this policy were disastrous. The poor needed no longer to trouble to work hard—or even at all. They were to be as fully provided for as were the industrious and the thrifty. The lazy or the worthless were tempted to become worse instead of better. Their obligations to work and support their families were put on the shoulders of the ratepayers. On the other hand, the good labourers who tried honestly to live upon their wages were encouraged to neglect their work and to have an easy time by the example of the pauperized families all around them. The number of families supported partly or wholly by the “rates” naturally increased rapidly until the figures were enormous. The Poor

Law rate rose with the same rapidity. The whole system of *allowances* was extravagantly expensive. Compelled to pay higher and higher rates, farmers and employers paid lower and lower wages. Indeed, work ceased in many a locality: land passed out of cultivation. Of two evils—high wages or high rates—employers preferred the latter. The evil of poverty was consequently not checked; the only way to check it was to pay high wages; rather was it increased beyond all reasonable limits. It was as bad for the employers and landlords as for the worker. Many of them had to pay away all their rents in poor-rates. In 1817, the vast sum of £7,890,801 was raised for this purpose in a population of 11,000,000. Indeed, so widespread was the general distress and the adoption of this method of relieving it, that "England stood in danger of becoming a nation of paupers."

In the towns and "new" areas, the state of things was not so bad as in the agricultural districts. Sufficient wages were there earned by the family to support itself: only the unemployed and the destitute poor came "on to the rates"; but their numbers were always high, and certainly increased; so did the rate; the urban Poor Law organization was strained to the uttermost to accommodate the army "of its pensioners." Laziness became a virtue to be rewarded: industriousness became a crime meriting a heavy fine. Pauperism became popular.

Fearful of this Poor Law monster they had so joyfully created, our governors did not dare for many years to check its extravagant fury. They left it alone—hoping against hope that after the Napoleonic Wars trade would revive and expand and the vast number of paupers would in the ordinary course of events be absorbed into industry. So the "pauperization" of England went on for more than one

generation. Not until after 1830 did there exist a Government strong or able enough to stop it by a brave and wholesome reform of our Poor Law system. This brings us to the *Poor Law Amendment Act* of 1834—one of the finest pieces of parliamentary work to be found in modern history.

In 1832 a royal Commission was appointed to investigate into the “management” of the Poor Law. Its report was published in February 1834. It confounded all intelligent citizens. “The evil system” above described “was found to be almost universal;” an “actual premium was set upon improvidence, if not on vice, by the wholesale practice of giving outdoor relief in aid of wages.” It was clear that the outdoor relief must either be abolished or strictly limited, that wages must rise and honest labour encouraged. A vital distinction had to be drawn at once between genuine poverty and pauperism.

The result was that Althorp introduced his great Poor Law Bill on April 17th, 1834; it was framed on the lines recommended by the Commission. The chief was *that none should be relieved unless he was absolutely destitute*. The paupers’ lot was to be made so hard that none would accept it unless the misery of his circumstances compelled him to do so. Parishes were to be grouped into Poor Law Unions. A Workhouse was to be built in each Union: the pauper was henceforth to be made to enter the Workhouse instead of obtaining outdoor relief: in the workhouse the sexes were to be kept separate: this was called the “Workhouse Test.” Only to extremely deserving cases was outdoor relief in money and food to be given: it was to be refused to the “able-bodied.” Boards of Guardians were to be elected in each Union: they alone had to consider applications for relief, and to control the administration of the Poor Law

in their union. Moreover, a central Poor Law Board to consist of three Poor Law Commissioners was to be appointed, to supervise the working of the whole new system: this Board was also to have full power to issue regulations, control expenditure, and organize an efficient method of inspection.

These drastic measures were accepted. Quickly they had their desired effect. Pauperism ceased to be popular. Indeed it was viewed with dread. The poor-rate fell almost immediately, and within a few years it was less by half what it had been in 1834: the number of paupers greatly diminished although the population steadily increased. In agricultural districts it resulted in a rapid recovery in the character of the labouring classes: in the towns its full effects were long delayed, but on the whole it restricted the grave social problem of poverty within reasonable limits.

There is, of course, the other side to this question—the side exposed in the biting and bitter attacks made upon the Poor Law by Dickens, in his *Oliver Twist* and *Mutual Friend*, or by Ruskin in his *Sesame and Lilies*. They denounce it as an *inhuman* system, and their descriptions of the conditions of life within the workhouse shock and harrow our feelings—especially in regard to the “pauper children.” The fact was that the authorities had become so afraid of the Poor Law problem that they were resolved to use the sternest means of preventing a recurrence of the disastrous conditions existing prior to the Act. The Poor Law had been a lavishly indulgent system: it was now changed completely: it was harsh, cruel, niggard—but *successful*. The “workhouse test” was strictly enforced, the management of the workhouses was extremely severe, the efforts to keep down rates and pauperism were unsparing. It is, of course, impossible for us to regard the wretched state of

a pauper's life during this "inhuman" period with satisfaction. The petty tyranny of the guardians, the child-destroying ogres and ogresses of beadles, and matrons, the slave-driving masters, and the starvation diet of the workhouse; the despatching of waggon loads of tender children to the mines and factories; or, the prolonged and enforced separation of husbands from wives—mothers from children—all such features of the system produce in us a healthy disgust. Yet, if we try to see the working of the whole system from the standpoint of *that age and generation*, we must agree that in spite of all its gross defects, it was successful in limiting pauperism and in permanently improving the condition of the poor.

For more than eighty years the Poor Law system has been at work. Most of its "inhuman" features have disappeared. It is still severe, but it is now human in its management and treatment of paupers. The only important change in its organization, however, was the absorption of the Poor Law Commissioners in the Local Government Board, in 1871: from this date the Government itself assumed, through this department, the final responsibility for the Poor Law system.

REFORM IN THE TWENTIETH CENTURY.—The final stage in this grave State matter is reached with the widespread desire which has arisen in this twentieth century to reform once more the entire Poor Law system. Much criticism has been lavished upon it. It is said that Boards of Guardians are inefficient: that still too many able-bodied men are kept in workhouses at the nation's expense; that the "casual" wards are an evil in that they encourage the "tramp" class; that its "administration" is very expensive; and that as it still exists, and its work is *now* tending to increase, it has certainly *failed*

to put an end to pauperism. Indeed, it is asserted that it cannot cure pauperism : at its best it can only restrict it ; and, that under the modern *humanitarian* mode of administration, it even fosters the evil itself. Figures appear to confirm this : In 1900 there were 735,388 paupers in England and Wales ; in 1910 there were 916,377. Expenses are heavy and on the up grade. The average cost of the paupers in 1901 was £27 12s. 10d. ; in 1913 it was £32, 12s. 10½d. ; in 1918 it was estimated at about £50.

After 1910 a big fall occurs in the number of paupers. In 1915, the last figures available, the total stood at 752,041. But, the removal of the pauper disqualification for the Old Age Pension (1911) accounts largely for this.

To appease the public demand for a reformed system, the Government set up a Royal Commission in 1905 to consider the whole matter. Not until 1909 did the Report appear. It was an enormous document running into over 1,200 pages. The Commissioners agreed on the necessity for reform—but disagreed on the question of remedies. Consequently, there were two Reports—the *Majority* and the *Minority*—each proposing the remedies favoured by their signatories. Those of the Majority were weak : they wanted “ to tinker ” up the old system. Those of the Minority were strong : if adopted, they meant a revolution in Poor Law administration.

Neither of these reports has been fully acted upon yet. Action, however, will most certainly follow the line of the Minority proposals. As you will most probably be interested in this movement of the future, the following is a brief and a useful summary of these recommendations :—

“ Boards of Guardians should be abolished. The various kinds of poor relief should be taken over by the existing committees of County and Borough

Councils. Education Committees ought to deal with children; Health Committees with the sick and aged; Asylum Committees with the mentally defective; and Pension Committees with old people in receipt of pensions. In each County should be appointed 'Registrars of Public Assistance' who would keep a register of all in receipt of 'public assistance'—see to the assessing and collection of rates sanctioned by Parliament, and approve of all grants of home relief. Over this local organization there should be a new department of the Central Government, under a new Minister of Labour.

"Methods of relief are also revolutionized. Workhouses should be abolished. Work should be found for the able-bodied by means of the Labour Exchanges. To increase demand for labourers, the working hours of each should be compulsorily reduced. Quite unskilled artisans and casual labourers should be granted relief from the rates under condition that they attend schools to train them in some trade. Work should then be found for them. To provide for times of exceptional unemployment, £4,000,000 should be set aside annually. The unemployed should be set to public works to be paid for out of these accumulated funds. The aged poor should be pensioned. Finally, men who will not work should be imprisoned in penal workhouses—presumably for life." *

Two of these suggestions: (a) *Old Age Pensions*; (b) *Labour Exchanges*—have been accepted and are now in actual operation. They have proved successful. The total number of Old Age Pensioners in the United Kingdom in 1918 was 948,582. Their pension of 7s. 6d. a week saves many of them from the "stigma" of pauperism. In every industrial area Labour Exchanges exist—and attempt to relieve

* Salmon, *An Introduction Economic History of England*, p. 85.

the perennial problem of unemployment. Their success is not as great as was hoped. Moreover, under the National Insurance Act (1912) the workers can insure themselves against unemployment. This safeguard against poverty is effective: but it unfortunately is only a *voluntary* safeguard. This "voluntary industrial insurance" was also a recommendation of the Minority report.

Thus, legislation has so far effected big but partial reforms which follow the proposals of this famous report; that they have alleviated the poverty of our poor is undeniable: but they have not *cured* it, and they do not touch even the fringe of the real problems of the Poor Law—(a) destitution, (b) the "won't works." Reform must, therefore, come in the future to make good these defects in our society—and it will undoubtedly be based on the far-sighted proposals of the Report above summarized.

Nor is this Report so revolutionary as might be supposed. It is drawn up largely on the principles adopted already in some European countries. In Denmark, *e.g.*, work is found for the unemployed by State officials, and the "won't works" are imprisoned. Before the war, the Poor Law administration in two German towns was highly commended by Poor Law reformers. In Leipzig and Elberfeld, poverty was prevented by supporting the unemployed out of the rates, and to those whose wages were insufficient an "allowance" was granted. This seems to suggest that the principles of the "Speenhamland Act of Parliament" were favoured there, and disaster was bound to result. The evil effects of the "dole system," however, were there avoided by paid officials exercising a *complete and stern vigilance over the worker's life*. Unless the worker were entirely satisfactory in conduct and work his allowance was stopped and penalties enforced. Such super-

vision savours of slavery—and is repugnant to the English idea of liberty. The essence of our problem is: *how can we give and safeguard as much liberty as possible to our poor while at the same time helping them to live by the granting of public money?* Our solution so far is unsatisfactory. It involves the harsh “workhouse test” and the social stigma of belonging to the “great army of paupers.” Another solution must be found. That it will be—and soon—is the hope of every right-minded citizen.

EXERCISES

1. Why is destitution a social evil?
2. How far did Elizabeth's Act remedy the problem?
3. What was the Speenhamland decision, and its results?
4. State the main provisions of the Poor Law Amendment Act, 1834.
5. State the arguments for its reform and estimate the value of the Minority Report, 1909.
- *6. Ought insurance against unemployment to be compulsory?
- *7. Is it possible to cure poverty and pauperism without severe restriction of personal liberty?
- *8. How does the science of eugenics affect this question?

CHAPTER XIII

THE "CAPITALISTIC SYSTEM"

THE organization of modern industrial and commercial life, and consequently, the organization of modern social life, have resulted from, and still exist by, the power and the success of *Capital*; our present state of society is, therefore, named "capitalistic" by economists; and our system of industrial, commercial, and economic life is known as "the capitalistic system."

During the past fifty years this system has been subjected to close examination and much criticism. Economists, publicists, statesmen, industrial leaders, commercial magnates, financiers, labour leaders, the workers generally—men of all ranks and types—have debated and discussed its merits and demerits—and still do: indeed, it may truly be said that modern opinion on this very important matter is sharply marked off into two great divisions—the one in support of this system, the other hostile to it. Both divisions have immense weight and influence: both are resolved that they shall in the end prevail. This battle of controversy is indeed become a battle in action: the future will certainly see the victory go to one of the two mighty and opposing forces. Whether we wish it or not we must watch the struggle and possibly take part in it—for, being in itself an economic struggle, we are all in a real measure affected by it. But we must neither watch nor act in ignorance. We must at least try to understand the position of both sides. No sound conclusion is possible otherwise. In this chapter, therefore,

it is proposed to outline the "capitalistic system." Whether it is justified in that it serves best the modern economic needs of men—is a question which you must ultimately decide.

The chief argument for capitalism is that it is *a natural growth and development of economic forces*. From small beginnings it spread and increased in strength so swiftly that it outstripped and defied the efforts of men to control it, until to-day its mammoth system and giant power are in entire possession of our economic life—a system too strong to be destroyed, but a willing and able servant of mankind. In other words, men have succeeded in directing its work, but they have not yet succeeded in absolutely controlling its power. As a "natural" development, it is said, it must pursue its destined course until it evolves into some other (and perhaps more advantageous) system of economic life and action. To understand this it is necessary to trace the main stages of its growth.

Its beginnings, in the modern sense, are to be found in the "revolutionary" period during which both industry and commerce were re-organized and made capable of vast expansion (1760-1840). The new order of things demanded the factory system, the assembly of many workers in one place under the supervision of employers, the institution of the wage-payment for labour. Success was impossible unless these industrial conditions were satisfied: nor could they be satisfied unless employers had enough money to start work on these lines and carry on for sufficient time to realise a profit on the sale of their production. Thus, lying at the bottom of the new manufacturing system, as the indispensable foundation upon which it could be safely built, was money—*capital* enough to finance business operations for at least a reasonable period. Without such

capital no man could even start his career as an employer. Even though he laboured almost night and day in his mill, striving with superhuman energy to quicken and to perfect his manufactures—as most of these pioneers of the capitalistic system did—he at the least had first to build his mill, buy the necessary machinery, the essential materials for his products, gather labour power, and then pay the wage-bill week by week and support himself and his family—perhaps for months before failure or success was his reward. In those first fierce days there was little or no credit allowed—especially to an unknown man. If he wanted cotton, wool or a power loom he had to pay for it quickly. So we see that the prominent feature of this early capitalism is an *initial outlay* or expense, *which is a necessity*, and which may result in either profit or loss. And this economic feature has never been lost: it is as prominent and even more important in modern capitalism—so notice it well.

At this point it is sometimes objected that the workers themselves could very well have raised the first capital among themselves, and have started business on the same lines, and the system would then have been co-operative and the rewards it yielded would have been commonly shared. This is an *unnatural* view. Firstly, the humble textile workers had no savings to pool together for such a purpose. Secondly, even if they had they would not have agreed to pool them: their comradeship was not so real as to destroy their distrust and suspicion of one another's honesty. Again, had they done so, could they all have supported their families until success brought them the profits? More to the point, however, is this consideration: had the workers—harassed by the violent changes in their industry, suffering through social misfortune, humble and ignorant by their upbringing—the necessary

knowledge of the new business organization, and the necessary spirit of daring enterprise and resolution to risk their "fortunes" in undertaking it? It could hardly be expected of them. As we said before—the race was to the swift and the strong—to those who had just enough money to give them a start (no matter how small) and who had the audacity and the spirit of adventure "to run the great risk" of losing it. This is seen more clearly in the fact that very few "rich" men are to be found among these pioneers. The vast majority of the first mill-owners were men of moderate means who were gifted with the power of leadership. From small employers many came in course of time to be great employers—the fortunate result of their ability in organization, bargaining, and leadership: many others, however, failed and ended their lives as common workmen. It is in this sense that the successful are known as "captains of industry."

The same conditions also applied to the revolutionized iron trade. There, too, we see the creation of big workshops and blast furnaces—success and failure—the small beginnings of capitalized industry and its rapid expansion *once the initial outlay and test of endurance* had been made.

In the mining trade the necessity for money before operations could start is clearer. Mining became scientific—shafts were sunk deeper—land had to be bought—transit had to be provided: thus the *initial outlay* was greater.

In agriculture the issue is as clear. The tendency was to destroy the old small holding and farm in favour of farming on a great scale. This involved either the buying or the enclosing of land: both processes were expensive: only those with the necessary money could succeed in getting vast farms, and only those with the necessary money and the spirit of enterprise could go further and cultivate

them and wait throughout a long season for their sales to yield them a profit.

The next point to note is that at this time the crying need on all sides was for an *increased production*. This was also a natural fact. Simply put, it comes to this: that more food, more clothes, more commodities of every sort were demanded to support the increasing population, and the rapidly growing trade of England with her colonies. These were economic facts which no one could very well control: they existed: they increased: they had to be satisfied. But they could not have been satisfied, by the small output of the old system of handicraft and hand-power, domestic industry, and the "open-field" mode of agriculture. The "revolutions" were necessary: the new order of things was alone able to yield sufficient produce to cope with the increasing demands: but as we saw, this new system of economic life, although more efficient and rapid, necessitated a foundation of *capital* expense.

So much for the pioneer stage. It at least reveals the interesting fact that the beginnings of our capitalized industry were not accidents or deliberate schemes of the wealthy, but rather necessities to which men were driven to meet successfully the economic conditions of an age of swift moving change.

The second stage covers roughly the first half of the nineteenth century. It is important: it shows that once the development of industry and commerce on capitalistic lines had started, *it could not be stopped*. It raced ahead over all obstructions, gathering greater speed and strength the farther it went.

Put simply, this means that more and more capital was needed to meet the cost of industries and businesses which expanded in size and increased in efficiency. This necessity becomes clearer if the question of machine power alone is briefly examined. Ever since

the introduction of the water-power machine the improvement of machine power as applied to industrial processes made rapid progress. The steam engine appeared : the steam power loom became a universal demand in the textile trades : steam power and engineering devices of all sorts were as eagerly demanded in the iron and mining trades. Machinery was constantly improved : the devices which served one month would be oldfashioned the next. More and more power, more and more speed, more and more accuracy were the first demands of industrial processes.

Imagine now a mill-owner or an iron-master whose business was up to a point successful, but which was clearly proven could be more successful if the latest machinery were installed in place of the existing. Would he not strive to obtain it ? Would he not put all his available reserve of capital and his profits in his business, in the hope of greater success ? Or, if he himself could no longer stand the financial strain, would he not cast around him to find friends, who would either lend him money or actually *invest* it in his firm ? Or, maybe, would he not seek a wealthy partner or decide to amalgamate his own business with another and a more prosperous firm which had offered him a partnership ? The volume of trade was increasing ; more markets were being exploited ; the demand for greater output never ceased ; the bigger and the better equipped rival manufacturer was certain to secure the market against the small producer whose machinery was oldfashioned. The larger the scale of his operations the greater the chance of the producer making a quick fortune.

Thus we enter a period of rapid expansion in industry, of enlarged mills, factories, and workshops, of great increases in the number of "hands," of mechanical triumphs, of more efficient and quicker processes, of keen competition in both trade and manufacture,

of unprecedented demand for "raw materials," of vast production, and of *feverish hunting for capital to finance the initial cost of all these big developments*—feverish hunting which involved tremendous anxiety, extreme skill, and often wild speculation.

From this form of capitalism—that in which those interested in business sunk all the money they had or could get into their operations—to that of "Company promoting" was so small and so natural a step that it was soon taken.

The "*Company*" is so distinctive a feature of modern industrial organization and is so essential to the capitalistic system, that its origins ought to be known. In its essentials it is an old form of economic organization. The Chartered companies illustrate this. In its modern form, however, it arises as a spontaneous development of the new capitalism in the early nineteenth century. A group of merchants pooled their resources and shared profits in the old days : they were primarily interested in their business venture. A group of employers might pool their resources in the industrial sphere, and share profits, in the early nineteenth century ; they, too, were primarily interested in, and exercised definite control over, their joint operations. But, when capital was scarce and urgently needed, and the idea of raising it from the outside public was conceived and acted upon, a new state of things—a new form of "Company" had arisen.

Now, the increased prosperity of the nation meant the greater distribution of wealth. Many thousands of people possessed more than sufficient for their needs. Their surplus money could only be used in three ways—(a) hoarded : this made it useless ; (b) wasted in luxury ; (c) put to profitable use. Nothing was more natural than the enterprising captain of industry should cast his eyes on this surplus

wealth of the nation: how useless it was to its possessors: how useful it could be to him—and to them. *To lend it as Capital*—to invest it in his business—so that he could enlarge his sphere of work and gain thereby larger production and profit—and to receive in return for its use a small annual interest or a stated share of the profit—how satisfactory such a scheme would prove, both to them and to him!

The economic demands of the age seemed to justify such a scheme. As soon as mooted, it was enthusiastically received. Everywhere it sprang up and took form. It became a successful practice. A business man had only to let it be known he needed capital: the public had only to satisfy themselves that his needs were genuine and his business sound, as a security—and the amount was quickly subscribed. The general public were as anxious to make money as the business men; such opportunities of doing so as offered by the company system were irresistible.

From this time onwards the capitalistic system developed rapidly. The real danger to it—*lack of Capital*—was now finally removed. Having once introduced the public into the system the necessary capital for its continued growth could not fail to be gained whenever needed by means of the "Company." Note, however, that a new principle has crept in and made good in the system: *that people whose primary interests are not industrial or commercial—i.e. those who do not labour in either sphere—are now interested in both*, in that so much of their money is invested in their organizations and work and that a certain part of the profits regularly are paid to them for the use of their money. The working of this principle results in the "*unearned income*" which so large a section of our nation receives to-day, and which is another distinctive feature of the capitalistic system.

Thus was the life of capitalism saved by the develop-

ment of the "Company." This will be more clearly proved later when we sketch the features of *modern* capitalism. At present it is enough to see that owing to this means of opening the lock-gates of the national wealth, a flood of capital rushed into the stream of industrial enterprise—increasing it until it became a broad and safe river. Indeed, the age went "Company" mad. *E.g.*, in 1844 no less than two hundred railway projects, all financed by this means, were awaiting the sanction of Parliament. There were disadvantages. Speculation led to disaster: disaster led to bankruptcy and ruin: fortunes were made: fortunes were lost: the greed for wealth was a social vice: society learnt by experience that some of the fruits of capitalism were either unripe or bitter: that enemy of the people—the "shark" or false Company promoter—was born, and ever since his criminal brood has battered upon human avarice and credulity. In this connexion it may be recalled that during 1840-4 the economic condition of Great Britain became very serious. In 1844 a terrible crisis was only just avoided by the Bank Charter Act.

This new state of things with its advantages and disadvantages could not fail to attract the attention of Parliament. The result was the beginning and the continuance of the "Company Acts"—*i.e.*, legislation designed to bring order out of the confusion and economic unrest. This subject is too large for discussion in this book. It may, however, be stated that there is now a voluminous code of law concerning Companies, and that the modern Company is or ought to be ordered on certain legal principles, the object of which is to protect all vital economic interests. The interesting fact about this Company law is that by its existence the Government recognized that the new financial unit of organization

known as a "Company" was absolutely necessary for the welfare of industry, commerce, banking, transport, and other spheres of national economic interest.

Far the best illustration of the tremendous help given to the development of capitalism by the "Company" is the transport system. The canals of the previous period were mostly private ventures, although some of the biggest were financed by the pooled resources of those interested. During the first half of the nineteenth century the birth of the modern railway services took place. Once the value of this new mode of transport was proven to the commercial world there was a boom in railway proposals. But a railway—even a small one—is a very expensive undertaking. *The initial outlay and the long time that must elapse before it begins to pay its way* is too great a strain upon private enterprise. To capitalize it by means of the "Company"—i.e. to distribute the outlay over a large number of people not primarily interested is far more satisfactory and quite successful in operation. The need to construct our railways—a means of transport vital to our expanded industry—gave the "Company" its first big chance. It took it. To its success we owe the railway system and capitalism owes its salvation—for without our railways modernized and capitalized industry would be practically impossible.

Turning now to modern times we see that what is known as the capitalistic system is but the logical result of the forces and movements in industry and finance already at work in the earlier periods. It has the same elements, the same features: it is based upon the same principles, it has the same objects and produces the same results—but all on such immensely increased lines that we can hardly imagine them. Moreover, the whole still rests upon the

foundation of *Capital*—and depends absolutely upon it for its security. No longer, however, must we consider the capital as so many thousands of pounds : to-day it is necessary to think in millions and even hundreds of millions !

The secret of the existence of this colossal economic machine is not to be found in the mass of capital which has been used to construct it. That is public enough. It is rather to be found in the fact that commerce is now practically without limit. It is world-wide. There is but one market really in which it can trade, and this is the International or world-market. The world has been “opened up” politically and economically in the nineteenth century. The population of the civilized world has enormously increased. The standard of living—the level of social comfort demanded by men—has steadily risen. The economic needs of our system of society have rapidly grown. Consequently there is an inconceivably great demand for every sort of manufactured commodity and food-stuff, and as great a demand upon the “raw materials” which Nature supplies. Working at top speed every civilized nation tries to supply these tremendous demands : they do not succeed : their massed supplies are never in the bulk sufficient ; there is always dearth, famine, poverty, and social distress in some parts of the vast “world-market.”

True to its principle that mammoth production can only be produced by industrial organizations on mammoth scale, modern capitalism has developed the business side of life on the widest possible lines. The theory is that *the greater the business* (no matter what) *the more it will produce*, the larger share it will take of the market demand, and the more profit it will pay. And the fact agrees with the theory. Thus we see the successful firm or house growing

bigger and bigger—its operations widening, its policy become more enterprising. The "small man" has to struggle to live. He can only exist to-day—even if he counts himself "very successful"—because the *demand* is so huge, that, produce as much as they can, the big capitalized organizations cannot really satisfy it.

Another cause of this gigantic growth is the fierce industrial and commercial rivalry which exists between Great Britain, the U.S.A., and Japan to-day—and which existed between Britain and Germany in particular prior to 1914. Having won the lead in the race for world trade, we intended to hold it. Our rivals, however, were keen in pursuit. Their industries and commerce had been rapidly developed on capitalistic lines. They, too, had learnt the secret that the biggest and quickest output pays the most. So they spared no effort to widen their operations and interests by a lavish policy of capitalization and scientific re-organization. Naturally, rather than in self-defence, our policy raced along similar economic lines. The result, is as previously mentioned, that modern capitalism is become so mighty a force that it cannot be fully or satisfactorily controlled by men. Its organizations get bigger and bigger; they become national, international, world-wide—and are dominant in the economic sphere at least.

All this simply means that the *capital subscribed for any undertaking increases with the growth of the undertaking*. And this increase in capital is now so great as to exceed the most fantastic dreams. *E.g.*, Messrs. Lever Bros., of Port Sunlight fame, commenced business in a "small way" some forty odd years ago. They succeeded. They increased their capital and enlarged their business: but it was still a "small" soap industry. Their success continued: their enterprise grew with it, and experience ripened

their ability : they again increased their capital . . . and so on. To-day, their industry is world famous : it is a mammoth capitalized organization : its production is enormous : its profits are high : its market is the world-market : its *capital stands nominally at £60,000,000*, and *it is proposed to increase it further to £100,000,000* ! What is the chief source of these £60,000,000—of which more than half is fully paid up ? *The private investor* ! The ordinary citizen who knows nothing about the making of soap, but who, considering the investment to be sound, puts his £100 or his £1,000, or more, surplus money into the business. Thus is capitalization gained : thus can a business organization increase almost without limit.

Such is a typical example of the way modern capitalized industry grows—if successful.

The capitalist, however, would not have us dazzle our eyes with figures. They are important in their way : but the real matter to understand is the *necessity for limitless production* to satisfy a needy and over-populous earth. *Capital is essential and demanded for this*. It is also demanded in the creation and improvement of the *whole system of national and world-wide transport* by which commerce may quickly convey the production of industry. Canals, railways, shipping, tramways, motor services, etc., all exist for the service of men, but only by reason of the fact that huge sums of capital were first raised to finance their schemes, either small or great. In the absolute necessity of obtaining *raw materials* capital again serves the interests of the world by allowing mining to be done on the biggest and most economic scale. In modern “intensive” or “extensive” *agriculture* the same value and necessity for capital is claimed. Finally, in the progress of *science* and *invention* the capitalist justly says that he has played an all-important part.

Now, what strictly is this "service" that modern capital does? It is just the old "service" of its first stage—namely, financing the *initial outlay*, and so making progress possible. This burden of *initial outlay* and unprofitable *labour-hire*—and it is often colossal in amount—has to be borne by someone. No one man could bear it. No one state government could bear it. It is only made possible by distributing it over a multitude of investors who are satisfied with their interest. In any one of the five main divisions of capitalized work mentioned above, take any example that occurs to you—a shipping service, a mine, a big industry, a great engineering feat, etc.,—clearly it could not exist without this big initial outlay; and clearly too—this is even more important—*the economic needs of men and of the world demand that it should exist.*

Finally, the capitalist reminds us that were it not for his gigantic schemes by which mammoth industries are financed and made possible, the overpopulated world would probably starve and the problem of unemployment would become so terrible that it would defy solution. In other words, he claims to have created work for men to do and by which (through the wage-system) they can live *before* he himself has any reward. Moreover, the works of men live after them. *E.g.*, the initial outlay and labour on a railway are permanently represented by the long fair-way, stations, and rolling-stock. The capital is "sunk": it is almost impossible to redeem it. From the national point of view this is an excellent result. The permanent *means of its industry* are thus provided.

In conclusion it must be noted that *the capitalized unit always tends to increase.* This generation sees what may well be the last phase of this extraordinary movement. Capitalistic undertakings of like nature

tend to join forces, and by pooling their resources to become one concern much mightier than before. The Trust, the Ring, the Pool, and other names are given to these combinations of capitalized trades, businesses, and interests. The Steel Trust, the Oil Trust, the Wheat Ring, the Tobacco Ring, the Shipping Pool, etc., were familiar features of national and international capitalistic organization before the war. It was a process of going "from strength to strength." Even purely financial concerns tended to join hands. *E.g.*, during 1906-10 no less than eighty-seven Insurance Companies were swallowed by others. In 1918 the British Dominions Company, having absorbed many big rivals, stood with no less than £16,000,000 to its credit. More startling still—during the war the British Banking world has been revolutionized by a vigorous policy of *amalgamation* pursued by its leaders. The whole of our vast banking businesses are now divided between a few powerful Companies—the massed capital of each running into hundreds of millions!

Indeed, in every economic sphere—industry, commerce, transport, agriculture—the same tendency proceeds apace: the unit, already great, is made yet greater by this process of fusion of like to like. The principle, however, is still the old one: *that the more capital means the more strength*, the greater enterprise, the greater output, the greater profits! Some writers profess to see in this last phase of "concentration" a most resolute effort of men to win an absolute control over this all-powerful system of capitalism. Gigantic financial and capitalized interests are now vested in the supreme control of small groups of men: if they cannot so order the capitalistic system as to make it work to their will none will ever succeed. So it is argued.

Whether this be so or not it is clear that present day

capitalism is so strongly organized that it is in absolute possession of the economic interests of the civilized world. It provides labour for men, but it organizes labour on military lines. It involves the scientific division of labour until the labourer is quite separated from the consumer in both sympathy and interest. It involves the monopoly of raw materials, of markets, and of prices. It involves the present social divisions and commands overwhelming influence in the political sphere.

Yet, if it is admitted that this system is but an evolution of natural economic forces liberated in the eighteenth century—an evolution which can be traced in detail historically—it is difficult to denounce it as an arbitrary system. Unjust, oppressive, even dangerous it may be in the opinion of those who oppose it: but, as a natural development to meet the many and great economic needs of modern civilization, it is surpassing in interest and of supreme importance. Whether or not it in its present form completely satisfies this generation or can satisfy the next are quite different questions.

EXERCISES

1. Define *Capital* and the *Capitalistic System*.
2. What is meant by *natural development*? What are the chief reasons for thinking that *Capitalism* is an instance of this?
3. Discuss the chief features of (a) early Capitalism, (b) modern Capitalism.
4. What is a *Company*? Describe its work and influence.
- *5. "Capitalism creates work." How far is this true?
- *6. "Without Capitalism the world would starve." Discuss.
- *7. Discuss the evidences that Capitalism is an ephemeral system and is already "passing."
- *8. What are the principles beneath economic combination and amalgamation?

CHAPTER XIV

THE ROMANCE OF THE MINE

THE science of mining has had a gradual growth and development. Demanding for its basis an acquaintance with most of the applied and natural sciences, mining has been subject to continual advancement and improvement. Man at an early stage of his civilization probably found it advantageous to burrow into the earth to extract her treasures. On the discovery of South America the natives were found utilizing the mineral resources of their country to a considerable extent. In North America, at the Lake Superior copper mines, it is evident that the Indians have worked since the decay of the stone age, and their old implements have been discovered. Even in some British mines, stone weapons and rudimentary tools have come to light, as in the old working of the Magpie Lead Mine in Wicklow. In Eastern countries there is little doubt that mining has been practised from remote antiquity. Herodotus relates that a mountain in the Island of Thasos was completely burrowed by the Phœnicians in their search for the precious metals. The silver mines of Laurium in Attica were worked by the Athenians as early as the beginning of the fourth century B.C., and the quicksilver mines at Almaden in Spain were extensively worked by the Romans.

In the British Isles there is every reason to suppose that native metals, as gold, were worked at a very early period. The Phœnicians were in the habit of coming to the Cassiterides (probably the Scilly Isles or Cornwall) trading in tin. This metal was

bartered for ivory bracelets and necklaces, amber beads, and vessels of glass. More recent evidences are furnished by the old Roman mines in Wales at Gogofan, where they not only raised large quantities of gold, but had also extensive workings for the baser metal lead, at Nantymwyn. During the Saxon times mining was much neglected and what little was in progress was carried on by Jews. In 1259, Newcastle received a special charter from Henry III. to dig for coal; while in 1306 Edward I. issued a decree forbidding the use of this mineral fuel.

It is certain that during this early period the method by which coal was extracted from the earth was of an elementary character. Pits were dug in the vicinity of the superficial "lode" or deposit, *i.e.*, where the mineral vein broke the surface of the earth—and thence the vein was followed up by repeated burrowings. Nothing in the nature of a modern shaft was attempted.

From this time mining or rather "burrowing" for minerals—especially for coal—progressed steadily but without any notable improvements. We find mention of the Halifax coal field in the Wakefield Court Rolls, in 1308. It is not, however, until the sixteenth and seventeenth centuries that any big advance is made. Much interest in mining is then shown. Industrial activity and financial speculation in this sphere increase. There is a quaint passage in Gray's *Chorographia* which evidences this. Speaking of the year 1649, he says, "Some South Gentlemen hath upon great hope of benefit, come into this Country, to hazard their monies in Coale-Pits. Master Beaumont a Gentleman of great ingenuity, and rare parts, adventured into our Mines with his thirty thousand pounds; who brought with him many rare Engines, not known then in these parts, as the Art to Boore with Iron Rodds, to try the deepnesse and thickenesse of the Coale, rare Engines to

draw Water out of the Pits ; Waggon with one Horse to carry down Coales from the Pits, to the Stathes, to the Rivers, etc. Within few years, he consumed all his money and Rode home upon his Light Horse"—an interesting sidelight on the failures of early capitalistic enterprise.

As a result of this increased activity and interest the science of mining was from this time quickly developed. Alien refugees—especially Dutch and German engineers and miners—gave us valuable help. The first attempts to sink "shafts" were made, the primitive method of "burrowing" being superseded. The incoming of water through the porous rock and "seams" was always a tremendous obstacle to these pioneers in scientific mining. Desperate efforts were made either to prevent this or to keep the mines clear by "pumping." Early in the seventeenth century Lindsay, the father of the first Earl of Balcarnes, obtained a patent for an engine for this purpose. Fire engines were also used in the middle of the eighteenth century, while an improved pump is mentioned in 1778.

With the deepening of the shaft the problem of raising the coal quickly and cheaply became critical. Brand notes an important invention in 1753, when Michael Menzies devised a machine for raising the coal by hydraulic pressure. This, after many improvements, was quite successful and effected a considerable saving in time, cost, and labour. One man and the machine could do the work of three shifts of two horses each, driven by two boys.

The success of this experiment led to the increased application of science to mining. Invention and improvement followed each other in rapid succession. Our annual production always rose considerably. The estimated output of the coal mines alone during this period is as follows :

In 1660	.	.	.	.	2,148,000 tons
„ 1700	.	.	.	.	2,612,000 „
„ 1750	.	.	.	.	4,773,828 „
„ 1770	.	.	.	.	6,205,400 „
„ 1790	.	.	.	.	7,618,728 „
„ 1795	.	.	.	.	10,080,300 „

About this time there sprang up a curious arrangement known as the “ vend ” among Newcastle coal-owners. It appears to have taken definite shape about the year 1785. The object was to give the owners of mines which yielded inferior sorts of coal a chance. The shipmasters preferred to load the best sorts of coal: and if there had been no kind of regulation, the whole trade would have been monopolised by the few collieries which produced the best quality. All other owners would have been ruined. A commission, therefore, compelled the owners of the best collieries to name the price at which they intended to sell during the ensuing year. According to this price the remaining proprietors were to fix their prices. Moreover, the coal mine owners were called upon to state the exact tonnage they could turn out at full work. Thereupon, the committee assessed to each colliery the number of tons it must yield monthly. All owners, therefore, were able to find a market for their yield of coal.

The explanation of this great advance in coal mining is that the demand for coal fuel for iron smelting began to increase year by year. The history of the hardware trade in the seventeenth and eighteenth centuries is almost entirely concerned with the struggle that was made to overcome the difficulty that arose from the increasing scarcity of wood fuel. This had caused anxiety even in Tudor times, and there had been legislation with a view to maintaining woods and coppices in the reign of Henry VIII. The

famous Sussex Ironworks were regarded with special dislike, as they drew on supplies of timber that might have been available for shipbuilding, and competed with London for supplies of fuel. Eventually they were starved out; and the iron-trade migrated to Shropshire and the Forest of Dean, where both iron ore, and fuel for smelting, were more easily obtained.

From the sixteenth century onwards, attention had been directed to the possibility of substituting coal and coke, for wood and charcoal, in the various processes of the smelting of iron and iron manufacture. Neither Dudley, nor any other of the men who devoted themselves to this object, was able to get beyond the experimental stage; but the difficulties were gradually solved and the Darbys made the new process a practical success. The cast-iron bridge over the Severn, erected in 1779, marks the beginning of the new iron age and serves as a monument to the enterprise of this family.

The turning point in the history of the industry may be dated at 1760. From this time onwards the iron trade in England proceeded with unparalleled speed. In that year the Carron Works were founded, and the blast furnaces which Roebuck erected were built with a view to the use of coal. In the year 1790 steam engines were introduced to work blast furnaces. The effect of these improvements was that the coal and iron industries went forward by "leaps and bounds." The production of pig-iron was easily doubled: we began to export it. Malleable iron was produced from pig-iron by the process of *puddling*: water power was utilized for the blast furnace; the decayed Dowlais iron-works in South Wales were revived.

The whole of this wonderful era of progress in mining and its attendant arts was the direct result of the industrial revolution in England. Although

the eighteenth century brought with it such epoch making industrial changes, it had also its dark side. The conditions of life in the mines and collieries were, at the end of the eighteenth and the beginning of the nineteenth centuries, little short of appalling. Children, women, and men usually entered the mines at four o'clock in the morning, and remained in the pit between eleven and twelve hours. The child of six years of age was usually employed to open and shut the traps which prevented the circulation of inflammable draughts. For this purpose the child had to sit alone in a dark gallery for at least ten hours.

The mines were now becoming more extensive. Two shafts were used, one for ventilation and the other for bringing the mineral to the surface and for the descent and ascent of the pitmen and other workers. Lateral galleries were bored out from the main shaft and along these the trucks or waggons were drawn. For this purpose girls and young women were employed.

The remedy was long in coming. Devoted men, Oastler, Fielden, Lord Shaftesbury, laboured to persuade Parliament to regulate labour in the mines, but it was slow work. Even liberal statesmen, such as Bright and Gladstone, fought against some of the Acts which were to relieve the miners' lot. It was not until 1847 that an Act was passed which reformed to a wonderful degree the existing hard and brutalizing state of things.

From the date of this great reform, mining in Great Britain has progressed steadily. A wealth of science and industry has been lavished upon it. Improvements of all kinds have constantly been devised and adopted until to-day the work of mining and that of controlling and managing the mines is as difficult and as skilful as almost any there is. The first improvements are "humble" to our eyes: but they

were invaluable as stages in the progress of mine-engineering. *E.g.*, The "man-engine"—a crude and clumsy contrivance by which men ascended or descended the shaft more quickly—made its appearance, and was the forerunner of the modern scientific "cage." The first "man-engine" of this kind to be erected in this country was used at Tresevean, Cornwall, in 1843. A variation of it—*i.e.*, the "single rod engine," was worked on the same principle. One of its type was erected at Fowey, in the same county, in 1851.

Not only in this but in other branches of the science, great progress was made. For example, Davy made an important advance when he invented the "safety lamp." Formerly the lighting of mines was effected by candles placed in lumps of moist clay. In coal mines, such a system frequently proved disastrous owing to the explosive nature of the gases that diffuse from the beds. Davy discovered that by inclosing the light in fine wire gauze the temperature became reduced to such an extent that the flame could not pass through the gauze and ignite the surrounding atmosphere.

Moreover, trams to run on iron (and later steel) rails in the galleries, lifts worked on steel cables, ventilating engines, and a hundred other improvements have been made by science.

The wonderful progress of scientific mining during these centuries may best be observed in the spectacle of the modern mine. We will pay a visit to a South Durham coal pit.

Smoke hangs over the neighbourhood of the mine. Factory chimneys innumerable and gigantic rise into the sky on all sides. Here and there an iron smelting furnace sends up its bursts of heat and glare. The panting of engines, rushes of steam, rattle of chains and ropes, roar of loading and un-

loading coal—the hard and harsh music of industry welcomes us at the portals of the mine. There are two enormous shafts, each 14 feet in diameter; one the “down-cast,” for the air to “go down” into the mine—the other the “up-cast,” for the air to return after ventilating the pit. These shafts are in reality metal tubes made of plates of iron bolted together. The principal vein lies at the depth of 1,700 feet and averages 4 ft. 5 ins. in thickness. One of the shafts is divided into two equal parts. In each division, two cages fixed in wooden slides or “conductors” are worked, each cage carrying four tubs or boxes, each holding eight and a half tons of coal. There are three “winding engines” of 150 horse power for raising the coal. At the bottom of the pit a man called an “on setter” takes the empty tubs out of the cage, replacing them with full ones; then the empty tubs are conveyed on a tramway to the flat or station, where they are exchanged for full ones. The miner himself hews the coal with a pick, and for every 2 ft. of progress he makes, a piece of timber is placed over the spot and an upright piece fixed beneath it on either side, thus forming a framework to support the roof. This process is called “shoring.” A man called a deputy visits each working place twice daily. His duty is to see that the place is free from fire damp and in every way fit for working. At the bottom of each “up-cast” shaft, two ventilation furnaces are placed. They are in the constant charge of a fireman, and nine tons of coal are burnt at each furnace every twenty-four hours. Beside these, there are five boiler fires going into the same “up-cast” giving a temperature of 280 degrees and a ventilating current of 203,000 cubic feet per minute in the “down cast,” and 286,000 cubic feet in the “up-cast,” the natural heat of the mine being 74 degrees. Barometers

are fixed at the top and bottom of the pit, registered daily by the officer in charge of the mine. Should a sudden fall of the barometer occur, it is immediately reported to the deputies in the charge of each district, who keep a strict watch lest fire damp should appear from the light state of the atmosphere. Explosions of fire damp have invariably occurred during periods of marked atmospheric change.

The coal, after being brought to the "bank," by which is meant the top of the pit, is poured into a screen, and after a series of "pickings" and "screenings," is dispatched to its destination inland or to continental markets.

In conclusion, we may regard coal mining as our chief national industry to-day. The fields of its work are so vast, its output so enormous, the capital sunk in the industry so immense, and the value of the "black diamonds" so high—that it has no rival for industrial supremacy. The following figures will help to prove or illustrate this.

Year 1919.	Number of mines being worked in U.K.	2,814
"	of persons employed.	1,021,340
"	of persons employed underground	811,510
"	of persons employed on surface.	209,830

As to output, the following table is instructive :

Year.	Tons.	Value at Pithead.
1910	264,450,000	£108,400,000
1911	271,892,000	£110,790,000
1912	260,416,000	£117,921,000
1913	287,430,473	£145,535,669
1914	255,664,000	£132,596,853

During the war (1914-18) and since there has been a big decrease, the causes of which are not fully known.

Year.	Tons.
1917	248,473,119
1918	220,000,000 ?

The output of coal from the United Kingdom is about 22 per cent. of the total coal production of the world. Before the war we exported no less than

73,000,000 tons a year: but this export was sadly reduced owing to the war necessities.

It is easy to see that coal mining is a "key" or vital industry. It is as valuable to the State and to industry as food is to the human body. Without coal the industrial and social activities of a modern civilized community to-day would be paralysed. The energy which coal supplies is essential. No substitute which can be applied to our needs has yet been discovered. Coal maintains our factories, our railways, our shipping, and allows us most of our social and domestic comforts and conveniences. "In a modern civilized community coal is king."

Owing to the war most European lands are to-day badly in need of coal. There is consequently a prosperous future in store for this industry. The big fall in the recent "output" will undoubtedly be caught up and past records broken. All the same, it ought to be borne in mind that coal is *consumable* wealth and is a "wasting" asset: *i.e.*, the stocks are limited, the coal fields are *exhaustible*, and unless new sources are found in the not-distant future, the coal shortage will be irremediable. The duty of all is, therefore, to husband the coal supply as much as possible. Nothing less than the industrial life of the world, apparently, depends upon it.

EXERCISES

1. "The war was won by coal." Discuss.
- *2. Account for the fall of "output" in recent years.
- *3. How far was coal necessary to bring about the Industrial Revolution?
4. "The coal industry is the most dangerous of all." Discuss.
- *5. Discuss the purpose and results of "The Coal Commission," 1919.
6. Is the "Nationalization of Mines" (a) practicable, (b) reasonable?

CHAPTER XV

THE ROMANCE OF THE RAILWAY

As men reckon time it is but a short while since the steam engine and the railway system were unknown and undreamt of. Leap back a hundred years—come to life again in the busy days of the “revolutionary” period—and you would lose at once all the many cheap and invaluable conveniences of travel you can now enjoy. In those rough days coaches were the only means of “comfortable” transit, unless you were rich enough to own your own travelling carriage, or were so poor that you had to walk—the fate of the vast majority of “travellers” in those days of shifting population. The carriage or coach was very clumsy and very slow: weather, accidents, “horrible roads,” footpads, and other causes would generally cause long delays. But so accustomed had the public become to the sight and use of the lumbering “coach and four” that it was many years before the majority of the nation ceased to look upon the railway when it appeared as a “new-fangled contraption,” which was extremely dangerous for passengers.

The *railway* itself, not the engine, is older than is popularly imagined. In 1676 “tram”-ways were in use in mines or other places where the carriage of heavy loads was necessary. These “tram”-ways consisted of strips of oak planking laid on the roads, over which ran the wheels of the waggons. This idea proved rather costly, as the wood had to be frequently replaced. Then someone thought that it would be

far cheaper if a rail were laid on the top of the planks. This introduced the use of iron rails, and thus the first railway came into being.

It is very uncertain who should be honoured as the first to use a *steam*-driven vehicle. Many men in different countries had long had the thought in their minds, and large numbers of experiments were made before any useful results were obtained. A Frenchman named Cugnot appears to have built a vehicle driven by steam in 1769. It was an extraordinary looking machine, as it ran on three wheels (one in front and two behind), and had two cylinders to turn the front wheel. The French National Arsenal constructed it, while the Comte de Saxe paid the bill of costs. Later, in 1804, an American named Oliver Evans built a dredging machine, which was worked by its own steam. The British, however, were in the front of this new "*steam*"-movement. A young Scotsman, James Watt, had already brought about several important improvements in the stationary steam-engine, which prepared the way for the *locomotive steam-engine*.

The first railway engine to run in Great Britain is said to have been tried on the Merthyr tramway road in 1804. Apparently the attempt was not successful, and the true advent of a railway engine was put off until William Hedley's "Puffing Billy" came on the scene. This quaint "contraption," looking something like a modern fire-engine, had a curious arrangement of mechanism above its boiler, from which long cranks reached to a cog-wheel that made the engine work. It first came into action in 1813 at a colliery near Newcastle-on-Tyne, and did not cease its work until the Government claimed it as a national treasure in 1872. This is a length of service that no modern engine is at all likely to claim, since with the greater power of locomotion

the mechanism has to stand a much greater strain. Though William Hedley brought the locomotive before the public, it was George Stephenson who was to make the chief step towards the present day stage of development of the railway steam-engine.

Early engineers had met a serious obstacle in the difficulty of getting the fire to draw properly. George Stephenson made several experiments, and in 1815 he thought of making the waste steam "blow" the fire. This idea resulted in the invention of the multi-tubular boiler, which practically solved the problem. He also invented the method of joining the piston rod and crank directly to the wheel. Having done this he constructed an engine which travelled on the first railway line laid for public use, that between Stockton and Darlington, opened on September 25th, 1825. This locomotive, which weighed eight tons, had a top speed of fifteen miles an hour.

George Stephenson himself drove the engine of the first train running on this Stockton-Darlington line. This train, which travelled at the respectable speed of ten miles an hour, was used in the first place merely as a goods train, carrying coal and other material. The public, however, were so delighted with the success of the experiment that they demanded the addition of coaches for passengers to the train. A month after the opening of the line, the Company decided to run one passenger coach a day. This coach was built after the style of the horse-coaches that were in use on the roads, and was able to accommodate six passengers inside and about twenty outside. The return fare for the two-hour journey was two shillings. The establishment of this railway line had an astonishing effect on the price of goods in the neighbourhood. The cost became very much cheaper.

There were no signals on this railway line; to avoid the danger of collisions and obstacles on the line, a

horseman was sent on in front of the train to warn people to keep clear of the track. This was an awkward proceeding, especially in the more densely populated parts of the country, and as a result the lines were fenced off.

The success of the Stockton-Darlington railway had a great effect on the nation, and did a great deal towards opening its eyes to the value and necessity of railways. Naturally the people complained that all those whose living was in any way connected with the horse-coaches would lose their work. This was correct, but on the other hand the railways opened up another and larger source of work for the public. As soon as people saw that their objections were groundless, they began to welcome the railway warmly.

In 1830 a railway line was built between Liverpool and Manchester. As yet the Manchester Ship Canal was not in existence; it was therefore of great importance that a cheap, fast, and efficient method of communication with Liverpool should be arranged. To make certain of getting the best type of locomotive, the directors of the line offered a prize of £500 to the maker of an engine which possessed certain improvements over all existing types. Naturally, George Stephenson entered this competition. He constructed the famous "Rocket" locomotive for this purpose, and won with great ease. This queer looking little engine, weighing but four and a half tons including the water it carried, drew a coach carrying thirty people at the then astounding rate of thirty miles an hour.

This performance finally decided the public as to their attitude towards the railway. Yet, despite popular opinion there were men in power, including the Duke of Wellington, who refused to recognize and support this invention. These men naturally belonged to the old Tory party, and objected to any-

thing that would disturb settled customs and interests. An unfortunate accident which took place at the time of trial had a good deal to do with the objections raised against railways. Mr. Huskisson, the Chancellor of the Exchequer, was run over by the "Rocket" and died of the injuries received. Yet Parliament fortunately did not refuse to allow the building of fresh lines; and in 1838 the first line running from London to Birmingham was completed. Up to this date, no less than fifty-six Acts of Parliament had been passed, permitting the construction of about 1,800 miles of line. Now came a *boom*, people thought that railways might be built and run profitably anywhere. Scores of new Companies were formed. All sought Parliament's permission to construct new lines. Legally all had to deposit a sum with the Government as a proof of their determination to do business. Records state that up to November 30th, 1845, 1,263 plans for fresh lines with estimated costs had been presented—the total estimate being near £500,000,000. As the deposits, £59,000,000, was far greater than the amount of gold in the Bank of England, a terrible financial panic ensued; shares fell; thousands were ruined; bankruptcy threatened England—a disaster staved off only by the working of the Bank Charter Act, 1844.

Only 120 companies out of 1,263 which sent in plans during this period of *boom* and *burst* were able to build their lines. Thus was our modern system really started. Since then fresh railway lines have been laid down in all parts of the land. Continuous development has gone on. Improvements in engineering, track-laying, station-building, tunnelling, organization of traffic, and administration of "services" have been so constant and successful, that the great railways of to-day were created. To the year 1910 over 4,100 Acts of Parliament had been passed

which permitted the construction of railways or which gave necessary facilities for the expansion of railway interests. Until a few years ago there were about 500 separate Companies in existence: now, by far the greater number have been "taken over" and bought up by the few big Companies. These few big Companies themselves have in some cases combined—and the modern railways are practically one vast organization run on capitalistic lines: it possesses the monopoly of land transport.

The importance of our railways can be judged by the work they do and by their *capitalized* worth. The paid up capital of the railways is £1,421,848,000. Over 55,000 miles of line exist in Great Britain. In 1913 the number of passengers carried was 1,228,316,000; and the amount of merchandise and minerals carried amounted to 520,279,126 tons. In that year the receipts from passenger traffic were almost equal to those from the transport of goods. Then the total profits on the year's working were £52,011,000.

During the period of the Great War 1914–18, the British railways played a vital part in our victory. The wonder of their power of transport was then fully revealed. Millions of troops and millions of tons of war equipment, ammunition, commissariat, and all that goes to make up the extraordinary provisions for modern warfare, were moved swiftly and safely from the factories at home even to the "rail heads" on the battlefields in Europe, Africa, and Asia. The pre-war organization of our railway and transport services, although very fine in itself, was found inadequate to meet the tremendous and unexpected needs of the crisis. The system was thoroughly re-organized and placed under Government control. This system of organization is still continued. There is only one drawback: it is very expensive. The handsome profits of 1913 are no

more. Indeed, the balance is on the wrong side. In other words there is a deficit—a big one of £112,000,000 a year to be made up to cover the full expenses. This big loss is mainly due to the high level of prices, increased wages, and destruction of rolling stock resulting from the necessities of war. The future of the railway world is therefore full of interest to the nation: it has great problems to solve—the chief of which is to continue the work as efficiently—but at less cost. Whether the “Government control” will develop into “the nationalization of the railways” is also a first-class public issue.

The building of a railway is a big and costly operation. The cost, however, varies a great deal according to the country in which the railway is built. In an “old-established” country like Great Britain very little of the land belongs to the State, and the land wanted by the Company for its track would have to be privately purchased. On the other hand, in an undeveloped country, *e.g.*, Canada, practically all the land belongs to the State; being anxious to get their country “opened up,” the Government would offer big inducements to Railway Companies—going so far, if necessary, as to give them the land. For instance, the Canadian-Pacific Railway was granted 25,000,000 acres to help them in building a railway across Canada. This item of land purchase alone represents a large portion of the bill of costs; it makes all the difference if the land can be easily obtained.

In Great Britain one mile of line costs £52,400; in the United States and Canada it costs £12,390 and £11,470 respectively. On the Continent the building is also cheaper than in Britain—one mile, France costing £24,790; Germany £19,930; and Austria-Hungary £19,580. In Australia, as would be expected, the cost is comparatively low, the lines in New South Wales costing just over £14,200. Western

Australia produces the cheapest railways with a cost of £1,450. This is caused by the fact that the farmers cannot live profitably without a railway; so they first build small light lines to open up the districts; when there is a sufficiently large population in a certain area the "pioneer" lines are replaced by heavier ones. The land of course belongs to the State. Another matter that considerably affects the nature of the bill is the kind of ground over which the line is to pass. If much tunnelling or bridge-building and embankments are necessary, the construction of the track is liable to prove most expensive.

The cost of the modern locomotives, carriages, and waggons is also very great, especially in the case of a large Company. A locomotive costs between £1,500 and £5,000 according to the type wanted, and the sort of work it is expected to do. The price of carriages varies according to the type of carriage required—Pullman, or third-class. A Pullman costs over £3,000 to make; an ordinary first-class from £500 to £1,500; a second-class from £450 to £1,000; and a third-class from £350 to £600. Coal waggons vary in cost in proportion to the weight of coal they can carry. The total amount of rolling stock in Great Britain, excluding that possessed by railways owning less than 100 miles of line, is 860,368. The cost of keeping the railways running is no less a sum than £81,000,000 a year; and of this sum £26,000,000 are spent in maintaining and renewing works, railways, and rolling stock (pre-war figures).

Considering the enormous number of trains running and the immense number of passengers, it is natural to expect numerous accidents, and loss of life. Yet owing chiefly to the high state of engineering skill of our inventors, the number of accidents and the fatal casualties is extremely small. According to recent returns the danger of travelling in the United

Kingdom compared with that in the United States, in proportion to the number of journeys made and the number of workers employed is as follows :

UNITED KINGDOM			
	<i>Killed</i>		<i>Injured</i>
Passengers . .	1 in 704,719,666		1 in 37,221,700
Railwaymen . .	1 in 1,389		1 in 240

UNITED STATES			
	<i>Killed</i>		<i>Injured</i>
Passengers . .	1 in 2,316,648		1 in 138,740
Railwaymen . .	1 in 399		1 in 26

The romance, the wonder, the power, the extraordinary benefit of the railway may perhaps be more easily imagined from this brief review of its birth, its growth, and its present work. It is a lasting monument of engineering genius and the spirit of public service. These great qualities of our race have created this gigantic transport service and have brought it to its marvellous state of modern efficiency. Yet, our engineers and scientists are not satisfied with their achievement. They labour still to improve it—for the benefit of man. In the future, as in the past, there will be a constant process of improvement. Electricity—the youngest of sciences, the most powerful of all motive forces—is even now being brought into this field of human endeavour. Electric railways are with us : the electrification of our whole system is but a question of time. That done—the steam-engine will be obsolete, and a revolution in railway science will have been made. Speed, power, efficiency, cleanliness, will have been gained. The signalling system, the preventives against loss of life, the science of track-building and tunnelling and bridge-building—these essentials are also certain to be improved. Moreover, there are the schemes of the mono-rail, the railless and the gyroscopic services still to be brought to perfection and full use.

In all directions there is room for advance; this will be made. The economic demand for better transport will be more than a sufficient stimulus to compel men to make greater efforts than ever before. The advent of the aeroplane and the marvellous development of aviation—especially on the commercial side—will also create a rival transport service which the “old” railway system will have to respect and meet in honourable fight. But this is looking far ahead.

Let us here at least remember what we and all the world owe to the railway. It revolutionized transport. It made modern industry, commerce, and civilization possible. It touched into new life and endeavour every land it entered. It brought trade, business, wealth, population, western ideas, and civilization in its turn wherever it went. “New” lands, like Canada or Australia, it “opened up.” Sparsely peopled and ill-cultivated before, they are now fertile and support huge populations. “Old” lands, like India and Africa, have begun life again under its influence—a life which promises to be marvellous in its power and prosperity before the world is very much older. To the “old economic” lands of the West, to Great Britain, France, and the lands of Central Europe, it came as the greatest of all boons—allowing them (especially Great Britain, the pioneer of modern imperialism) to extend their life, manners, and civilizing influences over the whole world, until the world itself seems to be transformed for the better service of mankind.

EXERCISES

1. How did the Railway solve the Transport problem?
2. Railways as a factor in civilization.
3. The organization of railway services.
- *4. The Nationalization of Railways.
- *5. Will railways retain their monopoly of “goods traffic”?

CHAPTER XVI

THE ROMANCE OF SEA-POWER AND STEAM-SHIPING

THE Phœnicians may be called the pioneers of sea-faring. They were the first race to make sea-trading a profitable calling. Skilled in all kinds of workmanship, industrial arts and crafts, and especially in dyeing, they had no lack of merchandise with which to barter. Setting sail they piloted their heavily laden ships to foreign shores where trade awaited them. Adventurous also, they would set out to find new shores, new peoples, and new markets. About 1,200 B.C. they held all the carrying trade of the then known western world; they were masters of the sea. After a long and prosperous supremacy they gradually fell into the background before the advance of first the Greeks, and later, the Romans, to maritime power. For more than a thousand years these two wonderful races of men dominated the life of the ancient world. Their knowledge and use of sea-power were not the least of the long list of triumphs which each in turn enjoyed. After the decline of the Roman power, the next sea-faring race to demand attention, is that of the famous Northmen or Norsemen from Scandinavia.

These Vikings grew strong while Rome was at the height of her power; for a considerable time, however, Rome held them in check. But so far geographically were they removed from the scenes of Rome's chief maritime interests that they throve continually to greater strength. Savage, hardy, warlike, these ancient "sea-dogs" loved adventure

for its own sake. In piracy and hostile raids they spent their lives. Merchandise did not attract them. They were "rovers" by nature. They would set sail to discover "new and fair lands." If successful they would return home for their wives, children, and chattels, and then emigrate to their newly found "paradise in the western seas." Many came to England; they formed the ancient tribe of the Veneti. Others went to Gaul and became the founders of the Frankish race. In the course of time, and with their increased strength, they made both England and Gaul the special lands for conquest; and later still they became a veritable plague to Europe. From their Northern strongholds they came in their hosts innumerable, and swarmed over Western Europe and along the Mediterranean sea-boards, plundering and devastating. These sea-rovers built good ships, which were propelled by sails and oars. Their seamanship was excellent. At the most their vessels were about 100 feet long: in them they defied the worst storms—the roughest seas; across the unknown Atlantic they sailed and first discovered America; through the Bay of Biscay and down the West African coast they ventured.

The next maritime peoples of importance were the Portuguese, the Venetians, Pisans, and Genoese. They gained possession (from the twelfth century onwards) of the European carrying trade: in particular, they brought Eastern goods from Egypt and the Orient to all countries of Europe. In 1453 the Turks captured Constantinople. This caused a crisis in the Oriental commerce. The Turks imposed heavy duties on all Christian trade. This made it well nigh unprofitable to bring Indian and Oriental luxuries into Europe via Egypt or Constantinople. Yet, Europeans desired these luxuries; so it behove their sea-farers to find a new trading

route to the East—to “Cathay.” Many sea-captains set out on their voyages of discovery; only one or two gained their destination. Columbus reached America, and went no farther; Vasco da Gama sailed round the Cape of Good Hope, but his sailors made him turn back; Magellan rounded Cape Horn and reached the Philippines. This last voyage definitely linked up Europe and Asia, and the Portuguese had the commercial benefit of it.

The Spaniards gradually pushed to the foreground about this time. They were greatly helped by their territorial acquisitions in South America. The country was rich, and the Spaniards made the most of it. Their ships gradually crowded the seas, and Spain held almost undisputed sway over the Atlantic Ocean. Her violent persecutions of the Protestants caused the Dutch and then the English—both *rising maritime* races—to attack her supremacy. The Dutch drove the Spaniards out of Holland, and settled down to sea-trading: they prospered exceedingly. England began by wholesale piracy. The Spanish fleets from America were attacked and plundered. Sir Francis Drake was the most famous of these sea-robbers. The power of Spain received a mortal wound, when, in 1588, the “Grand Armada” was dispersed and annihilated by the English fleets.

The blow that crushed Spain’s hopes decided that England was *another competitor for sea-power*. Soon other nations were left behind, until Holland and England were the two rivals for the mastery of the sea. Long-drawn wars decided this rivalry in England’s favour. Both nations suffered heavily. Finally, Holland was too weak to fit out a fleet that could carry on the struggle, and England’s supremacy was a fact.

At this point, however, France rose up to challenge our power. For over a hundred years this grim

struggle went on. The French Revolutionary Wars saw its end. The British fleets were severely tested ; but at the battle of Trafalgar (1805) the enemy was finally vanquished, and Britain's supremacy on the seas was henceforth firmly maintained.

This is briefly the history of the age-long struggle for sea-power. Now there remains to be told the history of the ships themselves.

The ships of the Phoenicians (1,200 B.C.) and those of to-day can hardly be compared ; there is so vast a difference between them. Yet the improvement came so slowly that not until the advent of the " steamship " and the iron-built ship in the nineteenth century was the difference really essential or important.

Modern ship-building is one of the many marvellous results of the Industrial Revolution.

The first step was taken when Thomas Savery (1760) built a boat that was driven by a primitive kind of paddle-wheel. He used four oar blades fixed at right angles, connected with capstan worked by sailors which caused the oars to rotate. The first paddle-boat worked by steam was made by Jonathan Hull, in 1763. The public, however, could not give up the idea of a ship moved by the use of sails, and the steam-propelled ship made but slow progress. Other nations began to experiment with the same purpose.

An American, William Henry, made model steam-boats ; in 1763 he placed a steam-engine in a paddle-boat, but the boat was capsized. He made other attempts without success. Younger men took up his ideas. James Watt's steam-engine had aroused great enthusiasm in France ; and the Marquis de Jouffroy conceived the idea of a steam-driven paddle-boat. He and a few other nobles formed a Company to finance the undertaking. Things moved very

slowly, and when in 1774 the boat they were making sank, the Company broke up. Jouffroy, however, continued the work, and in 1783 produced an efficient boat. The Government refused to accept it, and Jouffroy gave up the work in despair. So France lost the credit of being the first nation to adopt steam-navigation.

Meanwhile the Americans were going on with the good work; in 1786 James Rumsey steamed a boat up the Potomac River at the rate of four miles an hour. He was assisted by a man named Fitch, who soon after set to work on his own account. For years he laboured until he produced, in 1790, a boat that steamed up the Delaware River at seven miles an hour. Unfortunately, lack of funds prevented him from improving his former designs.

Another American, Robert Fulton, carried the experiment a stage further. In 1797, he went to France to make experiments and to try to get the Government to take up one of his inventions. In disgust, he came home via England, where he saw and procured a steam-engine. Fulton placed the engine in a boat, which he named the *Clermont*. The result was so successful that he formed several river-ferry Companies. When America went to war with us in 1812, he conceived the idea of a steam battleship! It was to be 156 feet long and to weigh 2,475 tons. The authorities accepted the plan; in 1814 the building was commenced, and in just under a year it was completed. The trial was successful. Unfortunately Fulton did not live to see the completion of his great plan. Although the Americans did so much inventing, they were using sailing vessels long after Great Britain had begun using steam-ships. Their part in this new adventure of science was, however, invaluable.

Now let us see what Great Britain did towards

the developing of steam-shipping. The first "steamer" was built by an engineer named Symington. This little boat was used on the Firth of Forth and Clyde Canal as a tug. At that time (1801-2) Lord Dundas was the Governor of the Company that owned the canal. When he saw this little boat pulling heavy loads along, and maintaining a speed of seven miles per hour, he thought the "steam" idea worth consideration. He ordered Symington to build a boat, to be called the *Charlotte Dundas*. This vessel is famous, because she was the most successful vessel of her time, and did much to arouse interest. Her greatest feat was to pull a weight of 140 tons $19\frac{1}{2}$ miles in six hours against a strong wind. Unfortunately the action of the paddle-wheel was too powerful for the banks of the canal, so the vessel was taken out of action. Despite the success of the *Charlotte Dundas*, even James Watt did not think the new idea would go very far. Nevertheless it had aroused the interest of Henry Bell—the "father" of the modern steamship.

This Scotsman was a poor man who had been attracted by the project of steam-navigation. He experimented: his poverty kept him back. In 1803 he appealed to Parliament for help in his work; it was refused, although Lord Nelson strongly urged them to support Bell. This disappointed man then offered his idea to the U.S.A., but nothing came of the correspondence with their government. By this time Bell fortunately had made some money, having an interest in some baths at Helensburgh. He then conceived the idea that a steamboat service between Glasgow and Helensburgh would advertise his baths and his steamboat. Therefore he built a little vessel, known as the *Comet*, and launched her in 1812; she immediately began to ply between Glasgow and Greenock. The fare was three or four shillings ac-

cording to the class patronized; the service proved a great success.

Steam navigation on rivers now became an accepted thing. The first steamboat on the Thames, the *Margery*, was built by William Denny, of Dumbarton, and had to steam to the Thames, where she appeared in January, 1815. She was followed quickly by the *Richmond*, the *Regent*, and the *Thames*, each of which was a little larger and more comfortable than her predecessor.

Henry Bell's work was the foundation of the enormous ship-building industry which in these days flourishes on the Clyde. David Napier, a Glaswegian engineer, began to build steamships for various inter-city services. In 1818 he started a steamboat service between Glasgow and Belfast, and the *Rob Roy*, built by William Denny and himself, was the first ship on that service. The year before James Watt had crossed the North Sea and had steamed up the Rhine as far as Coblenz; and since 1815, daily trips had been made between London and Margate; so that *steam navigation on the sea* was definitely established. Most of the vessels carried sails besides the steam-engines, and travelled as far by the help of *wind* as by the use of *steam*. This was the cause of the American's failure to be the first to cross the Atlantic under steam. The idea of a Transatlantic steam service had already been brought before the Government of Great Britain several times, but it had not been supported. The first ship to cross the Atlantic by using steam was a Canadian one, the *Royal William*; it took seventeen days to make the trip from Quebec to London. She was followed by the *Savannah*, which, however, lacked fuel to steam the whole way. These crossings took place in 1819.

But many years were to elapse before steam was

regarded as the chief motive power for ships. It was found extremely difficult to carry enough fuel for a long voyage, so that the sails were relied upon to do most of the work. Not till 1838 was the death-blow given to the combination of sails and steam. Then both the *Sirius*, leaving Cork on April 4th, and the *Great Western*, steaming from Bristol on April 8th, arrived at New York on April 23rd, *having steamed all the way*.

Despite these successes the public did not have sufficient confidence in the steam-boats to make them pay. Only a few passengers, apart from emigrants, were carried, and these were only business men. Therefore the ships that followed immediately after the *Great Western* proved financial failures, and were withdrawn. The *Great Western* alone was kept on; but she was run at a loss. Though the sailing vessels were slower, they were sure; and, as they needed no fuel, they had plenty of room for cargo. Steamboats, on the other hand, were thought to be too speedy to be safe; the fuel, too, was expensive, and took up much room that could be used for cargo.

Mr. Samuel Cunard was the first man to start a regular steam service to Canada. He came over to England in 1839 with this object in view. He made arrangements with George Burns of Glasgow and David M'Iver of Liverpool, and the now famous Cunard line was founded. The capital was very speedily raised, and the Government promised a large subsidy for mail service. To begin with, the Company had four paddle steam-boats: the *Britannia*, *Acadia*, *Columbia*, and *Caledonia*, each of which was about 210 feet long, and of 1,154 tons burthen, with an average speed of $8\frac{1}{2}$ knots. This same Company now possesses the gigantic 900 feet long *Aquitania*, of 41,000 tons burthen, easily capable of 26 knots an hour! It owns also twenty-three other fine modern

vessels. Samuel Cunard was made a baronet in 1859, and died in 1865.

A rival line, originated by the Americans, opened up in 1850, under the name of "Collins," while another, the "Inman," followed soon after. The Collins' line, which possessed four paddle-boats, broke down after eight years' existence. Two of the boats had been lost, the Company was badly managed, and the U.S.A. Government withdrew the subsidy it had been paying. A greater factor in the failure of the Collins' line was the success which attended the Inman line. It had two *iron* screw-propelled boats, the *City of Glasgow* and the *City of Manchester*, both Clyde-built boats. This line was later incorporated with the American line.

Although the iron Inman boats had been so efficient, the Cunard company still kept to their wooden ships for a year or two longer. Public opinion was against iron ships, for people said "An iron ship is an impossibility; a piece of iron sinks, and it stands to reason that an iron ship will." In 1855, the Cunard line had its first *iron* steamship, the *Persia*, and her successor, the *Scotia*, also built of iron, was their last paddle-boat. The advent of iron in ship-building was materially hastened by an accident which happened to the *Great Britain*, an iron ship screw-propelled, built in 1839 by Brunel. During her fourth voyage from Liverpool to New York she ran aground in Dundrum Bay. There she lay for eleven months, and when she was refloated she was found to have suffered very little damage. About twenty years after the adoption of iron another great change took place, and that was the using of *steel* instead of iron.

While ship building was thus being improved, it naturally follows that the *engines* were being bettered. Gradually the boiler pressures were raised, but even in 1850 they were but 42 lb. to the square

inch, and the engines were coupled to the screw shaft. Unfortunately, the engines required an enormous amount of fuel, so that John Elder's invention was gladly received. This was the *compound engine*, which caused the steam to be used twice, once in a high-pressure and once in a low-pressure cylinder. This added to the power of the engine and lessened the consumption of coal. This made the ship less expensive and more profitable, as there was more room for cargo. Since then we have got the "triple expansion" marine engine, and Parsons' turbine engine—inventions which have revolutionized marine engineering. These inventions have greatly reduced the space required by a ship's machinery; and speed has been vastly increased.

Although all these improvements had taken place the sailing vessel still held its own. In 1860 most of the trade was carried in wooden sailing ships. After that until 1890 the iron steam ship was predominant, and now the steel-built steam ship occupies by far the most important place in the shipping of the world. The following table of the tonnage added (not including warships) to the register in the United Kingdom will prove these statements* :

Date.	Wooden Ships.		Iron Ships.		Steel Ships.	
	Sail.	Steam.	Sail.	Steam.	Sail.	Steam.
	tons.	tons.	tons.	tons.	tons.	tons.
1860	154,000	7,000	14,000	86,000	—	—
1870	73,000	7,200	50,000	360,000	—	—
1880	18,000	1,800	40,000	447,000	1,600	36,000
1890	7,700	1,300	6,000	40,000	96,000	817,000
1900	8,700	4,000	400	16,000	8,000	1,100,000

These figures also show that the ship-building

* Quoted from T. Warner's *Tillage, Trade and Invention*, p. 171.

industry had been growing rapidly during those years. As a great national industry, ship-building in the United Kingdom has made enormous progress during the last fifty years. We build for ourselves and for the world. Having most of the sea-carrying trade of the world, our merchant shipping has increased beyond imagination, until in 1914 it was calculated at over 19,600,000 gross tons—12,602 steamers at 18,683,039 gross tons; and 8,336 sailing ships at 846,504 gross tons. The total tonnage of the world's vessels was nearly 49,000,000—so nearly half of it was under the British flag. Our annual production has steadily increased. *E.g.*, in 1899 it was 949,010 tons; in 1911 it was 1,111,620 tons; in 1913 it was 1,231,921 tons, exclusive of warships. Owing to the heavy losses incurred during the war—losses put as high as 8,000,000 tons, our efforts to make them good and to regain our old sea-carrying supremacy have resulted in tremendous increases in output. In 1918 we turned out nearly 1,600,000 tons.

From every point of view there is a brilliant future before the ship-building world. Shipping is vital to the world's industry and commerce. The quicker and more strongly the various parts of our Empire and the various parts of the world can be linked together—the more efficiently the “bridging of the oceans” can be done—the greater will be the prosperity of mankind. In this grand work of “conquering nature” for the service of men, the British race has played a leading and most successful part. To the genius, skill, and labour our marine engineers have lavished upon this high task we owe as much as we do (perhaps more) to our naval and military heroes in the making of our Empire and the winning of our naval and industrial supremacy of the world. The construction of ports, harbours, docks, etc.,

should also be remembered in this connexion : they are as indispensable as naval victories.

The sight of a ship-building yard—a very wonderful sight to-day—ought at least to cause us to pause and reflect upon the real sources of Britain's power and success among the nations of the world—also upon the stern need there must always be for our island people to maintain the “ mistress-ship of the seas ” which our forefathers won for us, and which we in our turn have so successfully defended from the worst and most powerful of foes.

EXERCISES

1. Discuss the place of shipping in the transport of the world.
2. State the main stages of the development of modern marine engineering.
- *3. What *motive forces* are at the service of marine science ? Illustrate the use made of them.
4. Why should shipping be regarded as a romance ?
- *5. Ought shipping to be controlled by Government ? How far did our experiences in the Great War answer this question ?
- *6. Discuss the effects of sea-power in warfare.
7. What are our chief *naval* needs to-day ?

CHAPTER XVII

TRANSPORT AND COMMUNICATIONS

MENTION has frequently been made of transport and communications in the course of this small history. The growth of the most important parts of our modern transport system—the railways and the ocean going shipping services—have also been briefly reviewed in special chapters. Here, our purpose is to draw attention to the economic value of these vast systems. No student of industry or economics can afford to neglect this subject. It is full of importance: it merits as much study as can be given to it.

The first point to notice is that if our transport services were not as widespread or as efficient as they are, modern industry and commerce would be practically impossible. So vast is the organization of capitalistic enterprise in both these spheres, and so enormous is the annual "production" which the former makes and the latter handles in trading operations, that the most extensive, best equipped, and most rapid transportation is absolutely demanded. Over the thousands of miles of railways, over the splendid network of state highways and roads, over the broad and well known "trade routes" which "bridge" channels, lakes, seas, and oceans, along the courses of navigable rivers and through the maze of sluggish canal systems—this immense "production"—the achievement of the labour and the inventive genius of mankind—is borne to any place where it is needed in the world-wide market. These great lines of transport are indeed the "arteries"

of industry and commerce—the channels through which flows the life-blood of the huge economic organism. Any restriction, any stoppage or breakdown of these services results in congestion, waste and economic loss. If any big part of their system ceases to work, as, for example, the “holding up” of shipping or the railways owing to “strike” operations, both commerce and industry are vitally affected. Indeed, if such a big stoppage continued for merely so short a period as several weeks, the industrial and commercial life of our nation would be “paralysed”—as some writers vigorously describe it.

From these general considerations it is clear that transportation is not only of the highest value, but absolutely *indispensable* under modern economic conditions. This being so, it is necessary *to safeguard its existence, to improve its services to even greater efficiency, and to make the fullest yet the most economical use possible of them.* Let us briefly consider each of these “transport necessities” in turn.

I. To safeguard the existence of transport services means that they shall be strongly protected against any hostile forces. Such hostile forces may exist: they can be grouped into three classes:

(a) *An enemy power.* Volumes of evidence, if necessary, could be used to prove how disastrously destructive the operations of war are upon transport services. In the great European War of 1914–18, the whole system of land transport (even including the highways) of North France, Belgium, Poland, East Prussia, large parts of Italy and Austria, and the South-east of Europe, were practically destroyed. The damage amounted to colossal figures—hundreds of millions of pounds! On sea, similar disastrous effects were experienced. Great Britain alone lost over 10,000,000 tons of merchant shipping. If, with the help of the imagination, it is recalled what an

enormous amount of *capital* these lost services represented and what an enormous amount of *labour* and time was occupied in their creation, the magnitude of the disaster suffered by the world's industry through this destruction of means of transport can be realized. Against such hostility there is only one adequate protection—unless the possibility of war is happily removed from the affairs of men.

(b) *Labour discontent resulting in "war" between employers and employed.* This does not result in wreckage and destruction except in the extreme and happily few instances when *sabotage* takes place. All the same it is always a serious misfortune—resulting in great loss of time, money, trade, and social convenience; whatever part of the transport system is affected simply stops working. The "life-blood" of commerce ceases to flow through this "artery." Consequently the whole body of organized manufacture and trade is in some degree weakened. Its *economic activity* is lessened and threatened. In other words, the entire nation feels the strain of its needed supplies of commodities being "held up." To prevent such evil is necessary for the general welfare of the State. There is only one way to do this: *by improving the industrial relationship which must exist between employers and employed* until both parties are equally satisfied with it. How this is to be done must not detain us here. Its necessity, however, ought to be faced frankly by all concerned.

(c) Lastly, there is the internal danger to this great complex transport system of *lack of economy*. This means that its different services do not do as much work as they could, or as cheaply as they could, owing to faulty organization and to the competition of one service with another. *E.g.*, before the railways appeared the canal systems of England were our

real highways of commerce. Indeed, as we saw in Chapter IV, the canals came in the nick of time and saved industry by their solution of the urgent transport problem. Very many canals were then cut—the chief rivers were joined—a network of navigable waterways was made over England along which “production” could move safely to its markets. With the full development of the railways another and a quicker transport service was provided. Immediately there followed *economic competition* between the canal owners and the railway owners for the “goods traffic.” Although slower, canal transport was much safer in those days: manufacturers on the whole favoured the canals: when it came to cutting down “freightage rates” the canals easily undercut their rivals. To-day, however, and for very many years past, our splendid canal system has been practically unused and is now to all intents and purposes an economic failure: it is falling into decay, becoming derelict. Transport over it is reduced to the minimum. Why? The great railway systems, eager to secure the monopoly of industrial transport, *simply bought up the canals*. Possessing them, they pursued a vigorous policy of subordinating canal services to those of the railway. They killed the competition of these waterways. Slowly, therefore, canal traffic dropped off—until to-day it rarely exists, and the railways enjoy an absolute transport (inland) monopoly. This is the best as well as the greatest example of this internal danger.

Other grave examples, especially nowadays, exist. *E.g.*, it is claimed by experts on the traffic problem that the vast majority of railway trucks spend over 95 per cent. of their lifetime doing nothing or standing idle; that goods are very seldom able to be dispatched on a *direct route* to their destination—that millions of mileage, thousands of hours, great sums

of money, are lost every year on this account ; that, generally speaking, our goods traffic is either congested or slack and never works smoothly : that freights are restricted and rates are fixed arbitrarily by those powers fortunate in holding the monopoly.

Moreover, to-day new transport services are appearing and claiming serious attention. Motor traffic, electric traction, aerial transport—all are being rapidly developed : their future is full of promise : but the more they fulfil their promise the keener will be the competition between them and the railway (canal) services which will strive to retain their economic monopoly.

So far only land transport has been noticed in this connexion. Yet sea traffic is similarly affected. The small and the great shipping services struggle with one another for the carrying of merchandise. Shipping pools and rings are formed to gain transport monopolies : all the strength and skill of capitalistic enterprise is exerted to win these prizes. The docks, harbours, and ports of our country—invaluable ports as they clearly are in our whole transport system—are subjected to the same harmful economic influences.

The remedy for this extensive evil is a thorough re-organization of all the various transport services. *Each must be brought into harmonious working with the other : each must be worked as fully and as freely as possible : each must be a part of one system working as a single whole*—and not as a separate individual system whose *interest* must come first and which, therefore, is really working *in opposition* to the other “separate systems.” In the general welfare of the economic life of the state this re-organization ought to be made—providing always that the many private interests involved are not denied the safeguards which are considered just.

This important and dangerous problem of modern transport is now occupying the close attention of the Government. The re-organization of the various services to secure a single harmonious system is so huge a matter that it needs many sweeping measures of reform. It is so clear a necessity, however, that the Government has determined to make it, and the various measures of reform by which it is proposed to accomplish it are all embodied in *The Transport Bill*, which is at the moment of writing being debated in the House of Commons. The chief proposals of this Bill are that a Ministry of Transport should be created and that the minister responsible should have power to co-ordinate all the separate transport services into one huge system and regulate its running on the most *economical* lines and to the best interests of the industry and commerce of the nation. There is much opposition to the Bill. Its attack on the liberty and authority of the separate and powerful vested interests of our transport services is the real cause of this. Whether or not this Bill is passed, it is universally agreed that this internal danger of *uneconomical working* ought to be removed, if possible, from our organized or re-organized means of transportation.

II. So great is the demand for transport service in the modern business and social world that there cannot be too much of it. In every direction it ought to be extended; in every way known to science it ought to be improved; no restraint should be placed upon the mechanical and engineering genius which alone can assist the needs of men in this important matter; nor should capitalistic enterprise in this direction be unduly controlled: especially, in this matter, ought the high and low roads of the State to be kept always in a thorough state of repair.

Social life as well as business life demands all the

convenience which improved means of travel and transit can offer. Think of the great town with its hundreds of thousands of people and the need of these folk to move about quickly from one place to another: think then of the means that exist of their doing so—trams, 'buses, taxi-cabs, bicycles, light and heavy railways, tubes, etc. A good variety! And a good service of each kind. But, what is the universal complaint? That they are all insufficient to supply the enormous social demands made upon them! The resident in the suburbs of any large town is the unfortunate "authority" on this subject. Ask him his experiences. His "first-hand" information may amuse you but it will usually throw a strong light upon the necessity of enlarging, improving and quickening every kind of modern social transit.

The needs of commerce under this head speak for themselves.

III. Until expansion, new methods or improvements are contrived in our means of transit and transport, it is clearly the duty of all concerned to use the existing services as fully and as economically as possible. The need for this was discussed above in section I.—as also were the present day proposals for satisfying it. The guiding principle for all should be that *waste* is uneconomic wherever or however it occurs, and it should be firmly done away with by the most efficient methods and thorough re-organization.

Means of verbal and written communication are also of the highest social value and business utility. In the modern world they are indispensable. Economically, they are really inseparable from the big problem of transport. Indeed, both transport and communications are the two sides of the one question: how best can we establish and maintain *contact* with our fellow-men? To answer it practically is a necessity.

We happily enjoy a great and good fortune in this matter. Many, varied, efficient, and fairly cheap means of communication are ready to our hand for use. This does not, however, mean that we need not attempt to improve them. As in transport, no effort should be spared to make them better and cheaper. Every possible opportunity should be allowed to genius and capital to effect reforms. The whole world will profit by their success.

Students of industrial history must also face the interesting necessity of studying the methods of modern communication. Their scope, their nature, their purpose, the means they employ, the success they gain, and particularly their value to the industrial and commercial world, ought to be examined and learned. The humble but extraordinarily useful postal services, the telegraph, the cable, the telephone, the wireless systems, and even the signalling codes—indeed the entire range of these *communication services*—should be known and their value estimated, particularly in relation to the present organization and needs of industrial and commercial life. Their social usefulness must not be neglected; but this is neither so important nor so urgent as the social usefulness of transit.*

EXERCISES

1. What are the essentials of a good system of Transport?
2. What is a transport "monopoly"? How can it be created? Is it an advantage or disadvantage to commerce?

* An interesting example of the work of modern transport services is provided in the recently published record of "war services" performed by the port of Southampton—covering the period from August 9th, 1914 to the signing of peace, June 29th, 1919—or 1,784 days. 17,186 ships were dealt with. *Personnel* transported, 8,150,000; ammunition and stores carried, 3,500,000 tons; mail bags forwarded, 7,700,000; horses and mules transported, 860,000; guns and limbers, 15,266; vehicles, 180,000.

3. Discuss the dangers to transport and the way to avoid them.
- *4. "Lines of communication are vital in military operations." How far is this true?
5. Which of the modern systems of communication do you think (a) the most important, (b) the most useful? Are these two qualities necessarily the same?
6. Give some reasons for the rapid progress in aviation.
- *7. How far will the proposed re-organization of the supply of electricity (on national lines) improve transport?
- *8. What is meant by "the harnessing of Nature"? Illustrate your answer.
- *9. "Without abundant and accessible means of communication you cannot, in the modern sense, have a nation at all." Discuss.
- *10. "The Roman legions conquered the world, but it was the Roman roads that turned the conquest to account." Discuss.
- *11. Justify or criticise the "Ways and Communications Act."

CHAPTER XVIII

THE GROWTH OF TRADE UNIONISM

THE organization of labour in and by the Trade Union Movement is one of the most striking features of modern industrial history. To protect the workers from oppression and to advance Labour's interests whenever possible, have been and still are the real aims of Trade Unionism. The success of the movement has been so great that to-day organized Labour is fast becoming fit to share with Capital the control and the profits of industry.

ORIGIN OF THE TRADE UNION.—The Trade Union arose in the nineteenth century. It developed out of the Trade Societies founded in the last part of the eighteenth century, and was quite a new kind of institution. It had no connexion with the "guild system" of the Middle Ages—as some folk say. The capitalistic system of industry and the policy of *Laissez-faire* resulted, as we have seen, in the "free contract" and in the absolute separation of the workers from their employers. From 1750 to about 1860 social and industrial conditions were such that many millions of men, women, and children were reduced to the state of wage earners. The intense competition of the new industrial system caused a huge demand for cheap labour. As the labour market was always full, labour became very cheap and was so barely paid that life was often a wolfish struggle to survive. Wages fell constantly: hours of labour were very long: the conditions (sanitary, etc.) of

work were bad: living got dearer: it was a period of toil, suffering, injustice, "wage-slavery."

The only means to improve their unhappy lot was that the workers should *combine* together and demand (a) higher wages; (b) a shorter working day; (c) better working conditions. To "combine" was a natural means of defence. Combinations of workers, therefore, came about. Unorganized at first, they failed badly. Later (about 1790-1820), they succeeded in founding the old Trade Societies, from which the modern Trade Unions have sprung.

Until 1750 the workers were paid a fair wage and enjoyed fair conditions of labour. The law ordered it. It was the old English custom. Ever since Edward III's day, wages, hours, and conditions in almost every trade had been regulated by Acts of Parliament. Many and many a statute insisted upon it; perhaps the most famous is Queen Elizabeth's "Statute of Apprentices" (1562-3). The value of labour was officially estimated and publicly known; its reward (wages) fixed. As late as Queen Anne (1699-1714) "nearly a score of statutes were passed" dealing with the rates of payment in the textile industries—woollen, silk, cotton, cloth, flax, linen, hosiery trades; boot and shoe and all leather trades; building, coal, iron industries, etc. Thus in the early days of the industrial revolution workmen and conditions of work were State protected. *This old custom, however, did not survive.* The new system of competitive industry killed it. The master class would no longer obey the law, and Parliament did not enforce it. By 1776 Adam Smith declared "that the practice of fixing wages has gone entirely into disuse." The workers made vain efforts to preserve these customs and their rights. The silk workers at Spitalfields, the lace makers at Nottingham, and other trades combined and forced the matter upon

the attention of the Government. So great was the clamour that in 1778 a Bill was brought into Parliament to renew and revise the lost custom of regulating wages. The Bill was defeated. Parliament did nothing more. *Wages, hours, conditions, etc., were henceforth to be settled between master and man.* Rioting followed. Serious public unrest was general. Times had changed: conditions had to change too. The era of *Laissez-faire* was born.

Now, it was *illegal* for workers to combine in associations. This was again a very old law. From Edward III's days right down to the end of the eighteenth century there was a strong line of statutes which forbade it under heavy penalties. These *combination laws* were ready to hand, sharp instruments for use, when in the troubled times of the latter half of the eighteenth century workmen began to combine in self-defence. Thus, any combination of workers formed to secure redress of grievances could be and was banned and firmly suppressed by law. No longer protected by law, labour was now forbidden by law to protect itself. This defencelessness of labour was the root cause of all their misery. It allowed their working power to be exploited—*i.e.*, used unfairly—under the new system. It created that ghost known so well to economists and historians—the “*economic man*!”

But just as employers broke the laws regulating wages, etc., so did labour break the laws forbidding combination. To unite was necessary. Combinations naturally arose everywhere. Repressed by the Courts they rose again and again. From 1760–1800 no less than sixteen Acts were passed “to restrain combination.” Finally, in 1799, the famous Act “to prevent unlawful combinations of workmen” was passed. By this any sort of workmen's assembly was held to be seditious: penalties were grim. Had

this Act been obeyed workmen would have been "powerless to protect themselves." It was not obeyed. Severe though it was, it failed to prevent the movement of organizing labour spreading fast and secretly. Riots, tumults, strikes, took place whenever an attempt was made to enforce it. Growing alarmed at their failure and the rebellious state of the country, the Government brought to their aid other and monstrous Acts—such as The Seditious Acts, etc.—laws which were levelled at treason.

THE COMBINATION REPEAL ACT, 1824.—The leaders of labour saw that their movement could never really succeed against the strong opposing forces until the whole of the Combination Acts were repealed. *Therefore, to secure their repeal* was their first hard task. For twenty-four years they toiled and struggled to win this victory (1800–1824). It was a critical period. The whole force of the new economic tendency and organization was on the side of the law: the whole force of labour was defying it openly and secretly combining. Gradually, labour won. At last, in 1824, it triumphed—*by the passing of the Combination Repeal Act.*

This Act made the Trade Union possible: *i.e.*, it did not prevent its *public* existence. Immediately, the many Secret Trade Societies came into the open and renewed their fight for the reform of industrial life. *So long as "combined labour" did not use violence, force, or threats, or injure trade*, it was now free to promote, if possible, its own welfare. No fewer than forty-five of these Trade Societies existed between 1800–1825.

THE RISE OF THE TRADE UNION, 1825.—Modern Trade Unionism therefore started about 1825. Real public organization then began. During the next twenty-five years there was gigantic industrial and political activity in Britain. The pioneers of Trade

Unionism took advantage of both of these movements to increase its power. The great *Reform Act* was passed in 1832—an Act which revolutionized political life and paved the way for modern democratic franchise. Following this, Trade Unionism organized its strength on a more permanent basis. The Boot-makers' and Cabinet Makers' Unions date from this time. Their example was followed generally.

Most of the first Unions did not survive. They collapsed in unsuccessful strikes, or failed through attempts to confederate. Looked upon as fighting machines by their members, these young Unions were nearly all put to the test of the "strike" before they were strong enough either in organization or in funds to stand the strain. Result: disaster! Nor did labour seem to profit by this stern experience: the same policy and the same fate were their portion for many years.

The "Hungry Forties" is a confused but vigorous period. At first, a big revival in Trade Unionism is seen. The few Unions which had weathered the industrial storms till then re-organize on a firmer basis. Other famous Unions are founded: Miners (1841), Cotton-Spinners (1824), Bricklayers and The Amalgamated Society of Engineers (1845). Then follows a hurricane of strikes, riots, and failures. Still too weak to fight successfully, many Unions perish.

"OLD UNIONISM."—1850 is an important date. A big step forward was then taken in the organization of the Trade Union. Provident Benefits—an attractive feature to the worker—had always been provided for by many unions. The funds and the business of paying them out in this provident matter had been kept separate from the other business of the Union—the strike fund and activity and the organization of labour—which was generally regarded as the *real* business of the Union. Now, however,

the provision of Provident Benefits was revised and systematized. They were no longer treated as a secondary concern. In future, members had to pay a single contribution to the Union, and it covered both the provident benefits and the other purposes of the Union. This system became very popular. It was known as "Old Unionism" and was first tried by the A.S.E. It became the model of most of the existing and later Unions.

Profiting by this new form of constitution the Trade Union made rapid progress in the next ten years. No new features were developed. But great strikes—especially the Preston Strike (1853); the strike and the lockout in the building trades (1859–60), etc.—during this period did the movement more harm than good.

REFORM ACT, 1867.—The next item of interest is the political Reform Act, 1867. This gave workmen in boroughs the right to vote. This brought a big weight of *political* power to Trade Unionism. In 1868 the Trade Union Congress was started; thirty-four delegates, representing 100,000 members, met at Manchester. In 1871 sixty delegates met, representing no less than 1,100,000.

Naturally 1870–75 saw a wide expansion. Trade was booming: prices rose: organized labour fought for advance and for the first time won considerable victories. Wages went up: industrial conditions were improved. Encouraged by success, many new Unions were founded.

THE TRADE UNION ACT, 1871.—The great output of quiet energy of unionism during these five years was almost entirely due to the signal triumph it won *politically* in 1871 by the passing of the Trade Union Act. By this Act the Trade Union was at last made *lawful*, i.e., it was protected by law. The repeal of the Combination Acts (1824) gave labour

freedom to combine: *but any combination which resulted in the restraint of trade remained illegal.* Such a combination the Trade Union certainly was. It was, therefore, in fact, always under the ban of the law in its actual strike operations: its funds were unprotected: it could be prosecuted for any violence or loss caused to trade in strikes, etc., *The Trade Union Act, 1871, remedied all this injustice. Henceforth, the Trade Union was a lawful body, able to hold property in land and money, and was protected by the State.*

The importance of this Act (1871) cannot be over-estimated. In 1876 another Act was passed which gave Trade Unionism more privileges and strengthened its legal position. Thus protected, the Unions could pursue their politics fearlessly.

THE "BLACK YEARS," 1875-80.—But distress and disaster followed (1875-80)—the worst period ever experienced by the movement. The real cause was the sensational slump in trade. Wages naturally fell: unemployment was widespread: strike fever took hold of Unionism and almost ruined it. The strain on the Unions was terrific. Only the strongest survived and these were badly shaken. The rest—vast numbers—collapsed and broke up.

1880 saw the turn of the tide. Trade and Unionism revived together. New advances were made in all directions. Soon the movement was more powerful than before the 1875-80 crisis. In 1887 the Dockers' Union began. Its famous fight and victory in 1889 was a live tonic to Unionism. Growth and organization went on everywhere.

THE "NEW" UNIONISM.—Concerned above all things to win, many Trade Unionists at this time wished to give up the Provident Benefits provision, and so free their Unions to be purely *fighting organizations*. The time and energy spent in this "friendly

business," they argued, was too valuable to be "lost" in this way, and ought to be devoted to strengthening the organization of the Union to win in its strike actions. This movement was the result of the Docker success, 1889. It was called **NEW UNIONISM** as opposed to the **OLD UNIONISM**. A fierce struggle broke out between the supporters of the two policies. The victory lay with the old system for the most part—although many Unions became mere fighting bodies.

PROGRESS FROM 1890.—From this time until the present day Trade Unionism has grown steadily. To increase membership, to increase funds, to strengthen organization—have been its chief purposes rather than to court disaster by premature strikes. The strike for a while was viewed with disfavour by Trade Union officials. The fruits of the bitter experience of the past had been eaten and reflected upon by these able men. Their policy was *quiet growth*—the building up of vast reserves until victory in the fight was possible.

The powerful Unions of the present day and, in general, the strong organization of labour, are the results of this cautious policy. It has been well justified. The increasing strength of the movement can be seen from the following figures :

	1880.	1890	1900.	1910.	1916.
Members	211,091	645,451	1,572,361	2,017,656	4,399,695
Income	£240,448	£990,872	£2,256,291	£3,187,415	
Balance of Funds . .	£284,969	£1,102,147	£4,137,660	£5,935,356	

These figures taken from the Registrar-General's reports deal with the strength of *registered* Trade Unions only. A large number of Trade Unions are not registered; full numbers and particulars of the whole movement to-day are therefore difficult to obtain. But in 1918 it was known that the total membership of Trade Unionists was well over

4,500,000, that the income of the Unions was over £6,000,000, and that their balance of funds was about £10,000,000. A gigantic growth of Trade Unionism during the last thirty years is thus proven.

MODERN ORGANIZATION.—This modern period also sees the final stages in the organization of labour: its chief aim is to secure the “solidarity of labour.” Not only have individual Unions, *e.g.*, A.S. of Engineers, perfected their organization until they are considered very efficient, but the first successful attempts have been made to *confederate* the various Unions in different industries. To-day more than a dozen such great confederations of Trade Unions exist—the chief being the miners, railwaymen, textile workers, engineers and ship-builders, and transport workers. The object of these confederations is to give greater solidarity to the organized labour of the particular industry.

THE TRIPLE ALLIANCE.—The last stage in this attempt to secure united action by organized labour to-day is to be seen in the “allying” together of powerful confederations. To negotiate such an “alliance” is a tremendous task. One such “alliance” already exists—“The Triple Alliance.” It is made up by an agreement between the miners’, railwaymen’s, and transport workers’ confederations, to act together if necessary to win the demands of labour. This Alliance possesses great power, and is a colossal piece of organization. Its existence brings for the first time the threat of a National Strike into our industrial life. Indeed, this critical state of things was actually threatened in March, 1919. Labour, considering that at last its “solidarity of organization” was sufficient to gain its demands from the organized forces of industrial capitalism, threw down the gauntlet, and only the most skilled negotiations by both sides saved us from

being engulfed in the sternest industrial struggle known in our history.

This threatened "hold up" of 1919 was the climax of the policy of retrenchment and quiet expansion followed by Trade Unionism since 1890. About 1907 the decision to adopt militant measures, and make use of the "strike" if necessary, was taken. Many big and successful strikes followed between 1907 and 1918. With every success came new strength to the movement. To-day, labour as organized in its Unions is considered by its leaders, at least, to be able and powerful enough to take a large and responsible part in the ordering and government of industry.

The effect of Trade Unionism upon industrial conditions generally is reviewed in Chapter XXI.

Two points full of importance and interest to students of this subject are :

(i) *The Taff Vale Case*, 1900.—This was a "staggering blow" to Trade Unionism. A strike took place on the Taff Vale Railway Company. The Company took legal action against the Amalgamated Society of Railway Servants, to "restrain the action" of their officials and members. *This legal action was successful.* An appeal was made. Eventually the case was settled in the House of Lords; the verdict was against the Union.

Trade Unionism was astonished at the result. It virtually took the whole movement back prior to the passing of the Trade Union Acts, 1871 and 1876, when Trade Unions were under the ban of the law if they "restrained" trade. So decisive a check to progress had at once to be contested. The fight began and lasted six years. In 1906 the Trades Disputes Bill legalized *peaceful persuasion* in "picketing" and protected Trade Unionists from the wrongful acts of their servants or members in the event of a trade dispute, *i.e.*, a strike.

(ii) *The Osborne Judgement*.—This was given in the House of Lords, 1909. Its effect was to prohibit Trade Unions from raising money to carry on political action. Parliamentary levies were declared illegal. Refusing to obey this judgement many Unions were served with legal injunctions. In vain organized labour pleaded that such funds were necessary if their political interests and life were to develop properly. A series of great strikes, threatened and actual, revealed Labour's anger at the injustice. A crisis was reached in 1911–12. Finally, in 1913, the Government gave way. An Act was passed which allows the funds of a union to be used for *any* lawful purpose, although the consent of the members has not been given: *e.g.*, such money can be used to start trading operations. The Act also solved the *political levy* difficulty by allowing funds to be used for this purpose *provided the majority of members agreed to it on a vote being taken*.

EXERCISES

1. Discuss the regulation of Labour conditions by Act of Parliament.
2. Why were the Combination Acts in force so long?
3. What was the value of the Trade Union Act, 1871?
4. Discuss the aims of Trade Unionism.
- * 5. Discuss the dangers of Trade Unionism.
- * 6. Discuss the modern organization and power of Trade Unionism.
7. In which sphere—political or industrial—has Trade Unionism greater influence? Give reasons.
- * 8. Discuss the value of the Trade Union Congress.
- * 9. Define the relation between the Trade Union Movement and the Parliamentary Labour Party.
- *10. What are the qualities needed in a Trade Union leader? Would they justify his advance to high *political* authority?

CHAPTER XIX

THE "STRIKE"

THE Strike is a factor in modern industrial life which demands most careful attention. It is an organized attempt to stop industry by the workers refusing to work, *i.e.*, by withdrawing their labour power. The employers refuse to grant some demands of the workers: all efforts to settle the dispute by negotiation fail: the workers "down tools," picket the works to stop blacklegging, and live on "strike pay" from their Trade Union funds. Each side then waits for the surrender of the other—*each knowing that their power is necessary to restart the stopped industry*. Generally speaking, the strike is not fought to a finish. Settlement is usually made by negotiation.

It is a stern yet crude way of fighting. The workers believe in it; they commonly adopt it. Indeed, never were strikes so frequent and so severe as they were between 1907–1918. For generations Labour has been taught that the strike is its best weapon: the workers have been organized for, and trained in the use of it. Until Labour's belief in the power of this weapon has been destroyed, it will unfortunately remain in constant use as the "last resource" in industrial disputes.

The success of the strike depends largely on its organization. The organization of labour has been slowly strengthened during the last century. The Trade Union movement had no other aim than to organize the millions of "wage slaves" into ordered forces. It has accomplished its purpose. To-day,

more than 3,000 Trade Unions exist in Great Britain ; many are confederated : while the greatest are powerful enough to command the respect of all men. All are "fighting" organizations : all have seriously developed their "strike funds" until they are strong to stand the strain of a strike : all are ready to order the strike as a "last resource" in industrial warfare. Thus to-day labour possesses three great advantages over labour of a hundred years ago : (a) it is organized and skilfully led ; (b) it has much money ; (c) its rank and file are more intelligent through better education. Aware of its power, labour is ready to fight for what it believes to be its "rights." The modern "glut of strikes" is the result ; and very serious economic and political problems are raised.

HISTORY OF THE STRIKE.—The strike has always been used by labour to win improved conditions of work. Every concession ever made to labour has been compelled by either the use of, or the threat to use, this weapon. To tell the story of every such occasion or even to give a brief summary of them would exhaust too much space. It must here be enough to say that during the modern period (1790–1914) there have always been strikes. Some periods—usually times of trade depression—in the nineteenth century, *e.g.*, "the hungry forties" ; 1853–60 ; 1875–8 ; 1885–90 ; have teemed with them. Many strikes are famous either for their severity, *e.g.*, the Preston strike, 1853 ; miners' strike, 1858 ; building trades, 1860—or their success, *e.g.*, the dockers' strike, 1889 ; miners', 1893 ; boot and shoes, 1895, etc. All of these took place in the "old days," when labour organization in the Trade Union movement was incomplete and really experimental. Their degree of success was really small. With the growth of modern Trade Unionism after 1890, labour was more efficiently guided. Since then the "cause of

labour" has been steadily advancing: many a battle has it fought and lost or won—*e.g.*, Engineers for "eight hour day," 1897 (lost); Railwaymen, 1906 (won). Gradually by such pressure the conditions of work in most of the great industries have been improved and the social life of labour has been almost transformed.

The greatest successes, however, gained by the use of the "strike" were won during the last twelve years 1907–1919, and especially during the war period 1914–1918. The chief strikes were:—1907, Miners (lost); 1910, the Combine (lost); 1912, the London Transport Workers (lost); 1911, National Railway (won); 1913, ditto (won); 1914, Miners (won); 1915, 1916, ditto (won); 1917–18, Ship-Workers and Engineers (won); 1917–18, Textiles (won); 1918, Railwaymen (won); 1919, Textiles (won).

Conscious of its organized force and well aware that the industrial necessities of the land (especially during the war) were too vitally urgent to allow of a strike-stoppage, labour seized its unique chances and gained not only great rises in wages, but the epoch-making reforms of "the minimum wage" and "the eight hours day" in such giant industries as mining, railways, textiles, agriculture, engineering.

Many think that Labour was wrong in thus "forcing the pace" by the constant use of the strike when Great Britain was endangered by the sternest war in her history. But Labour replies that the economic conditions during the war became so severe—especially the high cost of living—that it was a practical necessity to secure at least proportionate advances in wage-rates.

Apart from the economic result of these strikes, an important fact to note is that the strength and organization of Trade Unionism has been much increased by their success. With the war over.

Trade Unionism is—as we have seen—so strong that it can now menace the industrial life of our land with the *national strike*—a new and formidable extension of strike-operation. Indeed, this is the last phase of the strike—unless, perchance, in the future an *international* strike machinery is constructed by the organizers of labour. It is to be hoped, however, that even if the organization does exist for both—neither will ever afflict us with its burden of calamity.

Is the strike a successful operation? This used to be a fiercely argued question. Labour's sensational successes in recent years have apparently settled it. Long ago when strikes were small and localized, it was uncertain whether on the whole strikes were "worth it" to labour: to-day, however, there is so wonderful a unity in labour organization that it is almost impossible to "localize" a strike. The dispute spreads. "Sympathy" plays its part, *i.e.*, trades with no grievances of their own will "strike" to assist an allied trade. Again, the practice of Trade Unions confederating—and even confederations contracting "alliances" one to another—"allying" in turn—has given such a solidarity to labour organization that the success of the modern strike (if authorized by the executives of the Trade Unions) is almost guaranteed.

But, *from the national view all strikes whether won or lost are disastrous*. They are stoppages of the industrial machine: they represent loss—reduction of output. So serious may a "successful" strike be that it may paralyze for a while the whole industrial life of the nation, involving stupendous losses in wealth and time, and unutterable misery to millions. Some figures will prove this:

In 1909 no less than 2,773,986 working days were lost by a total of 800,819 workers being on strike.

In 1910 the numbers were 9,894,831 days by 515,165 workers. In 1911 the numbers were 10,319,591 days by 961,980 workers. In 1917 the numbers were 5,513,900 and 820,727 respectively.

In the miners' strike, 1912, 800,000 miners were idle: many other industries also had to stop—brickyards, potteries, ironworks, steel works, cotton factories, were closed "down"—involving unemployment to 250,000 people. Altogether this strike resulted in the loss of 20,000,000 working days, and £5,600,000 in wages.

The lesson of this must be clearly learnt. *Strikes mean loss*—great loss—even if they are "won." The increasing tendency to strike nowadays is, therefore, a grave matter for the nation. The series of great strikes already noted involved enormous losses to our industrial and commercial life. The threatened national strike (1919) shows how this danger is increasing. While the workers in any section of industry may gain, *the whole of the rest of the nation*—many millions—*suffer*. Hence, the many who suffer regard the strike as "brutal and barbaric"—totally unfit to be used in any form of civilized life.

A more important view than this, however, must be regarded. If we as a nation are to make good our war losses and re-establish our world trade, we must try to prevent such loss of time, such waste of labour power, such stoppage of our great industrial machine. Our trade rivals gloat over our perpetual industrial disputes: *every loss we suffer thereby is a gain to them*. If our trade declines (as well it may) through "successful strikes," the "holding up" of industry, it will not be a national misfortune only, *but the "strikers" themselves will in the end suffer grave losses*. If trade declines so will work. It is, therefore, of the highest importance that in the future industrial peace shall prevail.

CONCILIATION AND ARBITRATION BOARDS, ETC.—Knowing the wasteful and ruinous nature of trade disputes—especially those ending in the strike, the Government has made attempts since 1896 to set up new means of settling labour troubles. As we shall see (Chapter XXI), these means are the old Conciliation and Arbitration Boards, the modern Whitley Councils, and the Courts of Government Commission. That such schemes will succeed we must all hope. Up to the present only the Conciliation and Arbitration Boards have had a good testing. In important cases (*e.g.* railway strike, 1911) they failed; but their success on the whole has been immense; *e.g.*, in 1911 no less than seventy disputes, involving 348,333 workers, were settled by conciliation.

THE CAPITALISTS' VIEW.—The strike is an attack on capitalistic ownership and control of industry. What is the view of the Capitalists? Acute men as they are, they have long since realized their own danger (and the national danger) from the "strike-fever" which has possessed organized labour, especially during the twentieth century. They have, therefore, in their turn organized into Unions. These Employers' Unions are extremely strong and of course inconceivably wealthy. In resorting to the strike nowadays Labour, despite its strength, always runs the risk of the "lock-out" and of being starved into surrender by the exhaustion of their own strike funds. Indeed this has often occurred, *e.g.*, the Dublin transport strike, 1913. By organizing a national strike and thus employing the full striking force of labour, the workers think they could defeat the strongest combine of capital. The chances, however, are against their success if it were a straight fight. Capital could outlast labour in mere obstinate refusal. But fortunately for the nation's life and the success of labour, such a catastrophe would

never be allowed in Britain. The Government would interfere; public opinion would be too strong; the absolute need of preventing any serious stoppage of our industrial life would compel the disputants to some settlement. The constant interference of the Government since the railway strike 1907, proves this: the best example being the setting up of the Coal Commission to settle the mining crisis and threatened national strike (1919). All the same, the right of the capitalists to reply to the "strike" by the "lock-out" is claimed—just as the workers themselves claim the *right* to strike. *The only question is as to the advisability of either party exercising their "right."*

To finish—although the "strike" has been wonderfully successful during the modern period, *it must now be regarded as an out-of-date weapon. It must be given up.* The plain truth is the nation *cannot afford it.* It is too destructive. It cripples industry. During the next twenty years Britain has to restore, and, if necessary, reconstruct her industrial and commercial systems, both so badly damaged by the Great War. The loyalty of labour is essential for this tremendous undertaking: the full use and co-operation of capital is just as necessary.

Labour is both strong and free enough to-day to enforce its just claims in the Whitley Councils or Courts of Commission. The existence of these *peaceful* means of settling industrial disputes does away with both the necessity and the justification of the warlike strike.

EXERCISES

1. The essentials for the strike's success.
- *2. The effects of the strike on industry.
3. The causes of industrial trouble.
- *4. Alternative methods of settling industrial disputes.

CHAPTER XX

THE CO-OPERATIVE MOVEMENT

TO-DAY in every large town at least there is a Co-operative Society whose various branches are known as "Stores." You have probably seen them. Your parents may possibly be "members" of the Society and do most of their shopping at the "Stores." You may also have heard of the C.W.S., or the Co-operative Wholesale Society, which is quite a different kind of institution—but a very important part of the same co-operative system of "production and distribution" of goods.

This Co-operative Movement must be seriously regarded by the student. It is a modern economic development or offshoot of Capitalism. It has grown very powerful both in industry and commerce. It is nothing less than a *new* method of solving the problems of "production and distribution" of goods—a method that is much favoured by the working classes, and which, having succeeded in thoroughly establishing itself in our modern economic organization, will undoubtedly exercise an increasing power in the future. It is therefore necessary for the student to know the reasons why this movement began, the methods it has adopted, the objects it sets out to win, and the effect its success has upon the conditions and organization of industrial and commercial life.

The first thing to grasp is that "consumption is

the chief end of industry, for everything that is produced and exchanged is intended in some way to be *consumed*." In other words, it is useless to make boots unless there is someone who wants them. The "someone" is the "consumer." The consumer, therefore, is a most important person from the economic point of view. The fact that he exists and has wants which must be supplied is the truly basic cause of all industry and commerce.

From this it is easy to see that the "consumer" and the "producer" ought to be in the *closest and most sympathetic touch with one another*—in ideal economic conditions. They should work hand in hand; *i.e.*, the consumer should make his needs known, and the producer should supply them to the best of his skill—for an agreed price. Such, indeed, was largely the case in the old days when the guilds handicrafts and domestic industry flourished. Nowadays, however, this close contact between consumer and producer is practically impossible. Modern industry organized on capitalistic lines prevents it: so also do the two facts that the population (the consumer) is so vast and that the market is world-wide.

Capitalism needs great organizations for its success; the greater the organization of industry the more divided and specialized becomes the part which each single worker plays in the *production* of any article. In a factory an article may pass through a hundred different "hands" before it is finished—and ready for the consumer. The result of this is that the worker *loses interest in the article itself*, and is so far removed from the *consumer* that he also loses *sympathy and knowledge* of him and his needs. The "producer" nowadays, is a "worker" only: any interest he has is a "producer's" interest.

The factory owner, the capitalist employer, the

managing director, these industrial leaders also naturally lose contact with the consumer. They, too, are far removed economically from him. Between them and him are the merchant-class, the host of "middle men," and retail shopkeepers. Indeed, the vast organization and whole work of Commerce lie between the *producer* and the *consumer*—the two ends of the modern economic system. The "producer" produces solely for the market. The "consumer's" interest in the market he loses sight of owing to his necessity of watching closely the interests of the men who control the market, who buy his produce—the great merchant class.

So, through lapse of time and the constant growth of industrial and commercial organization, the "producer" and the "consumer" have been divorced; to-day their interests are falsely regarded as opposed. In short, nowadays, everyone lives with his own interest most prominently before him. The capitalistic system necessitates this attitude. The result is that capitalism is looked upon with disfavour by large sections of men and other systems of "production, distribution, and exchange" of goods are planned, and sometimes tried as substitutes for this universal system. Co-operation is important in that it is perhaps the most successful of these economic "alternatives" to capitalism.

From what has been said it is clear that any scheme which had for its chief principle and object the re-establishing of the lost bond between the "producer" and the "consumer" would stand a fair chance of favour and success: it would make the strongest bid for the support of the enormous mass of the "consuming" population. Upon this principle the co-operative movement is based: with this object it is organized and its work directed. Its motto signifies this: "Each for all: all for each."

This leads us to glance at the history of this Co-operative Movement. Robert Owen, the capitalist captain of industry, social reformer and philanthropist, founded this "new social and industrial order." His plan was to make the people themselves—the consumers—responsible for the production, distribution, and exchange of all consumable goods. This was a complete overturn of the existing order. All departments of industrial and commercial activity, according to his plan, should be run on lines of the closest co-operation between employers and employed, between the producers and the consumers. Clearly this could only be made possible *by the consumers themselves accepting the duties of employers—and employing their own fellows to produce the goods.* This means that the consumers would themselves supply the capital and would own the workshops and factories; they also would supply the capital to run "stores" for the purpose of *distributing* the goods made: *they would be the employers, the owners, and the buyers* (consumers) *all together.*

The usual method adopted to raise the necessary capital was the following: Co-operative Societies were formed: each member bought so many shares: these shares formed the *capital*: these shares represented the members' interest in the business: the profits made were distributed according to the number of shares. This is still the method and system of the co-operative movement. It is simple, direct, and gives (i) the consumers full control of the business and its profit—as employers; (ii) the full control of the market of their produce—as consumers.

No sooner did Owen publish his plans than they were eagerly taken up. Experiments were made in many places. Rapidly and successfully for a while did this new movement progress. In the five years 1825-1830 no less than 266 societies sprang up—

fifty-three in Manchester district alone. The movement made a special appeal to the working classes: they rushed into it and rapidly increased its fast flowing tide. In 1834 the success of the plan seemed assured. In that year Owen organized a mammoth industrial institution called *The Grand National Consolidated Trade Union*. It had two aims: (i) to raise wages and shorten hours of labour; (ii) to organize co-operative industry on national lines. The speed of its growth was marvellous. Within a few weeks its numbers exceeded half a million. It collapsed almost as quickly. It had too little foundation. It broke the law. It excited the opposition of big employers. The existing system opened its artillery upon it: soon it was smashed to pieces. Distributive stores, co-operative workshops and societies—all came toppling down in the general ruin. The work of Owen seemed destroyed. The tide of the movement ebbed sharply and threatened to recede for ever.

It returned, however. This was due to the patient genius of Holyoake, the historian of the first humble efforts of the Rochdale Pioneers. From these new beginnings there has arisen the world-wide co-operative movement and organization of to-day. Twenty-eight poor flannel weavers of Rochdale paid twopence a week to a common fund. When it was £28 this fund was used to buy stock. The sale of it brought profit: the profit was left to accumulate. At length it got to be £5 per man. Each man then put his £5 share into a new common fund—and this £140 was the first *capital* of the Rochdale Pioneers. With this they commenced production on co-operative lines.

Thus re-started the movement again swiftly progressed. Societies were formed: “stores” were opened: workshops were organized. The methods

already described were the same in principle, but improved to meet the needs of experience. By 1850 the *distributive* societies were so firmly established that more vigorous efforts in the sphere of production were made and encouraged. Clogging, shoe-making, tailoring, corn-milling, and cotton-spinning were all successfully organized by 1854. The productive societies owning these producing organizations sold their goods to the distributive societies—and so the co-operative circle was completed. In 1863 the *North of England Co-operative Society* was established. This bought on *wholesale* lines: it supplied the “co-operative market”—*i.e.*, the distributing stores (societies). Evidence of its success is seen in the record of trade for 1864: it amounted to £3,000,000.

Once strong enough to withstand the fierce *competition* of the old order of industry and commerce, the difficulties to the future progress of this movement were chiefly legal. Between 1862 and 1893, however, these difficulties were gradually removed by Parliament. With their disappearance only business capacity, organizing skill, and loyalty of membership were needed to secure the constant strengthening of the “new order.” These qualities were well supplied—and the Co-operative Movement made a continuous and remarkable advance. Distributive societies were formed all over the land: their members bought their goods from their “own” stores; the “profits” they as owners of their stores shared according to their share of contributed capital. (i) Each member receives a fixed rate of “interest” on whatever paid-up capital he or she has in the society; (ii) Each member shares in a further “dividend” of “profits”—his share being strictly proportioned to his purchases on the following plan: for all purchases the member receives “checks”;

every half year or quarter these "checks" are handed in: when the "profits" are calculated a "dividend" of so much in the pound is declared—say 1s. 3d., and for every pound's worth of "checks" handed in 1s. 3d. would be paid to the member as dividend. *E.g.*, if I handed in £15 of "checks" for one quarter, I should get a "divy" of 18s. 9d.

In 1864 the English Co-operative Wholesale Society was founded. To this most of the Distributive Societies in England (which are self-governing) have affiliated. In 1868 the Scottish Wholesale started business. These two Wholesale Societies are independent and self-governing, but for certain great industrial purposes they have joint interests. Both have grown and flourished: to-day they form two of the largest "producing" concerns in the world. Over 1,200 Societies have joined them. They own flour mills, food factories, boot works, textile mills, soap works, printing works, clothing factories, farm and fruit estates, coal mines, tea plantations, shipping and transit services, etc., etc. Their funds are £24,000,000. They transact their own banking business, which amounts to £350,000,000 a year. They possess their own insurance society. Their interests embrace most if not all of the ordinary necessities of life. As colossal manufacturing and trading institutions they go on expanding in both operations and enterprise.

In 1869 the first annual Congress of the Co-operative Union was held. It has been held every year since. At its assembly the policy of co-operation is discussed: every important phase of its interests is examined. It is the Co-operative Parliament, and represents a membership of nearly 3,500,000 people.

The following figures will illustrate the growth of this form of economic organization since 1864, and will yield enough information to show the power it is exerting to change the "old order" into a "new."

Year.	No. of Societies.	Membership.	Sales in U.K.	Net surplus.	Capital
1864	394	129,429	£2,836,606	£224,460	£773,304
1884	1,291	729,957	£30,424,101	£2,434,996	£9,498,442
1914	?	3,200,000	£147,550,000	£15,200,000	£64,000,000

As an "alternative" to the usual economic system developed under capitalism this co-operative system is open to criticism. It is clearly not an *alternative to capitalism*. It is rather a new method of applying capitalistic principles—an "offshoot" of capitalism itself. Without *capital* it could neither work nor succeed. Indeed, following the natural tendencies of capitalistic organizations, it has grown to enormous size and still continues to expand its operations: but such growth always means a demand for more capital; and the vast increase of co-operative capital as figured above is sufficient proof of this.

It possesses, moreover, other features of the capitalistic system—features which many people say are grave faults. For example, it preserves the *economic relationship between employers and employees*. The fact that the consumers themselves are the employers does not alter their relationship to the many thousands who work for them. This relationship also involves the use of the *Wage Payment System*—one of the elements of capitalism which is most attacked—although, as we have seen, it is practically inevitable. It is said that so long as the wage system lasts, a contented relationship between employers and employed will be impossible. If this is so—the Co-operative Movement has not really solved this serious industrial problem.

Lastly, just as capitalistic manufacture merely aims to produce as much as possible without a scientific regard to the needs of the market—so also does co-operative manufacture. It is true that co-operative

production is meant for the co-operative market particularly—but this market nowadays is so huge (*i.e.* the demand is so huge) that to regulate the conditions of supply and demand is almost impossible. So it is claimed that co-operation is after all but a type of capitalism: its organization financially, industrially, and commercially, follow the lines of ordinary capitalized undertakings: it is a combination of capital and labour: it works for profit and “dividends”—“surplus” money.

A difference, however, exists. *The interest of the consumer is safeguarded*: indeed, to safeguard the consumer is the real purpose of the movement. That this aim cannot be gained *without the consumers themselves becoming capitalists* is perhaps the most striking proof of the necessity for capitalism. As we saw, the “consumers’” interest was practically lost or seriously neglected in the workings of ordinary capitalistic enterprise. To have saved it—to have brought it into a real contact with that of the producer—is, after all, a great economic achievement. In this fact lies the strength of co-operation.

Another important feature in which co-operation differs from capitalism ought to be noticed. It is the sturdy effort of co-operators to establish *moral principles* on which the conduct of business can be justified. Certainly there is little that can be strictly called *moral* in normal capitalism. It is, so to speak, taken for granted that “business” lies outside the ordinary conceptions of private conduct and behaviour. Co-operators, however, declare that as it is the agreed duty of the individual man in private life to obey certain moral laws, so he cannot escape this duty in his *public capacity* as a member of a “business” association. These laws bind the association together. In work, in business, in all public co-operative interests, there-

fore, members must be "just, humane, and considerate." Thus does every association bind itself to observe certain far-reaching principles—*e.g.*, "to promote the practice of truthfulness, justice, and economy in production and exchange." Again: "to abolish all false dealing." Or again: "To conciliate the conflicting interests of the capitalist, the worker, and the purchaser, through an equitable division amongst them of the fund commonly known as profit." (Extract from *The Objects of the Co-operative Union*.)

Co-operative enterprises are clearly right in insisting upon the introduction of moral considerations in their work. The economic relationship existing between all men would be much improved, if moral laws were obeyed in "business" life as well as in private.

Summing up, the co-operation in industry is a new type of capitalistic enterprise; it is based upon the principle that the consumer's interest is as important as the producer's; it cuts out all "middle interests" and so (i) brings the consumer and the producer into close contact: (ii) it does away with much of the waste caused by normal capitalism: (iii) it encourages good feeling and a sense of fellowship: (iv) it interests the consumer in industry and commerce, develops his intelligence, and trains his sense of duty and loyalty—thus making him or her a better citizen.

EXERCISES

1. Why is the Co-operative Movement important?
2. What are the chief features? Wherein does it differ from capitalistic business concerns?
- *3. Ought business to be conducted on moral lines?
- *4. Why is the "consumer's interest" disregarded in modern industry?

- *5. Does co-operation solve the question of Capital *v.* Labour?
- *6. Discuss the disadvantages of the “*divvy*” system.
- 7. Describe any other form of co-operative enterprise you know.
- *8. How does the co-operative movement affect (a) the small shopkeeper, (b) the large wholesale merchant, (c) capitalized production?

CHAPTER XXI

MODERN SOCIAL AND INDUSTRIAL CONDITIONS

WE ought now to look back over the eighty odd years which have elapsed since *Reform* began to make its voice heard in political, industrial, and social affairs (1830 onwards), and to see what changes have come about and what measure of general progress has been made. As far as is possible within the limits of a small chapter, we must review this period—epoch making in its extraordinary and rapid development of almost every interest in our national life—marvellous in its yield of political power and industrial and commercial prosperity—historic for the success of man in “harnessing” Nature to his economic service.

THE DEVELOPMENT OF INDUSTRY.—The development of industry has been continuous; it has exceeded every expectation; there now seem to be no bounds to its future progress and expansion. The chief reasons for this are (i) the creation of the capitalistic system; (ii) the skilful organization of the vast power of human labour; (iii) the triumphant wedding of science to industry and the arts of life. All three were necessary and indispensable; to all three we owe an unpayable debt; the last, however, makes the greatest impression upon our imagination. The mechanical genius which made the *Industrial Revolution* possible—the scientific knowledge which gave Great Britain the first use of the spinning

frame, the mule, the power-loom, the lace machines, the puddling furnace, the rolling mill, the steam-engine—was the solid foundation for the rebuilding of industry on scientific and modern lines. In the practical application of science to manufacture and industrial processes, the most rapid progress was made: throughout the nineteenth century even till to-day invention has raced ahead, lighting up the roads which labour must follow. These roads stretch in all directions and are lost in the gloom of the future: but our confidence in science is so deep rooted that we follow them without hesitation. The treasures of power and prosperity which we continually find awaiting us inspire us with this confidence and justify our grand industrial adventures.

So it is an age of scientific and machine-driven industry we have to review—an age in which the two chief problems of the modern industrial world have been brilliantly solved—*motive power* and *transport*. Profiting to full measure by their solution, our native industries have grown enormously until they are now gigantic; many other industries have been made possible; and others still are being started.

It is customary to-day to talk of our “key-industries.” These are found in the *first* group—our old industries which are still our greatest, whose success is the “key” to our national treasure chest, and upon whose existence we in turn really depend for our existence. These giant industries are: the textile trades, the iron and steel trades, the mining of coal and iron, ship-building, and the creation of the chief transport services. In the *second* group will be found such thriving industries as the building trades, manufacture of iron, steel, and wood goods, boot-making, clothing, food and drink production, the motor industry, printing, etc., etc. Agriculture stands in a class by itself: we shall look at it later on. In

regard to ship-building, railways, and mining, figures have already been given in chapters XIV., XV., and XVI., which prove how swiftly these industries have grown. The following figures will also illustrate a similar mammoth extension in the iron and textile spheres. In 1840 our output of pig-iron was about 1,000,000 tons. During the course of the century this annual average production increased until in 1900 it reached over 10,000,000 tons. In 1913, 5,138,958 tons were produced from British ore; 5,121,357 tons from foreign ores—the whole valued at £44,118,285! In 1840 the amount of raw cotton required to keep busy the spindles of Great Britain was about 600,000,000 lbs. In 1900 it was 1,646,000,000 lbs., in 1911, it was 2,207,000,000 lbs. In 1918, there were no less than 151,492,420 spindles at work in the world. Of these 57,685,841 were working in Great Britain; and a quarter of this total were at work in one Lancashire town, Oldham. In 1918 the world possessed 2,844,747 looms; of these 787,679 were at work in Great Britain.

Indeed, nothing is more remarkable than this tremendous expansion of our “key” industries. Naturally, it has made big demands on labour—*i.e.*, it has vastly increased the amount of work for men to do. *E.g.*, in 1841 there were 3,382,000 persons engaged in British manufactures and mining. In 1901 there were 8,364,000. During this time the population was practically doubled. These figures therefore, represent an *increase of employment*—although only two industrial interests are concerned. In 1911 it was calculated that out of a total population (over ten years of age) in England and Wales of 28,519,313 no less than 16,286,919 were engaged in some definite “occupation.”

Naturally, too, this expansion has resulted in huge production, an increasing volume of trade and

an enormous creation of wealth. Some figures here are useful.

GENERAL TRADE (MERCHANDISE ONLY) OF THE UNITED KINGDOM

Year.	Imports.	Exports.	Total.
1700	4,600,000	6,100,000	10,700,000
1750	7,250,000	10,150,000	17,400,000
1800	30,500,000	38,120,000	68,620,000
1850	95,250,000	82,500,000	177,750,000
1900	523,075,163	354,373,754	877,448,917
1910	678,257,024	534,145,817	1,212,402,841
1913	768,734,739	634,820,326	1,403,555,065

It has been estimated that in 1914 the total wealth of the United Kingdom was £15,500,000,000, of which no less than £12,500,000,000 was *privately* possessed by citizens: also that in 1918 our total wealth was worth £18,900,000,000—or £12,900,000,000—if £6,000,000,000 be deducted for *war debt*.¹ Most of this is, of course, represented by permanent or *fixed* capital, and would be difficult “to realize.”

Only by bringing imagination to assist the mind to grasp the meaning of these huge figures, is it possible to see how rich a harvest has been reaped by the co-operating of labour and capital in the modern industrial and commercial world, and how vast has been the constant increase of the harvest throughout the course of the past century.²

Speaking of “harvests” reminds us of agriculture. The story of success must now change into a narrative of failure. We have already noted the economic tendencies which caused (a) agriculture (even on the new capitalistic system) to decline; and (b) the depopulation of the rural districts. These tendencies grew stronger after 1850. Mechanical

¹ F. W. Pethick Lawrence, *A Levy on Capital*.

² The statement of the London Bankers' Clearing House, 1917, shows “operations” amounting to £19,121,196,000.

inventions and particularly the swift improvement in the means of communication and transport quickened the rate of the influx of people into the towns. Whole countrysides became deserted: villages were abandoned: farming ceased: "private landed estates" appeared, where in earlier days agriculture had vigorously flourished. In 1901 as many as 77 per cent. of our people were resident in towns. We had ceased to be an agricultural nation. During the middle part of the nineteenth century, agriculture either remained stationary or quickly declined—it varied with the district. The opening up of new countries (Canada, etc.), the development of ocean going transport, and the railways system at home, allowed an ever increasing supply of corn and food stuffs to be brought cheaply into England—after the Repeal of the Corn Laws. The growing population eagerly welcomed these new sources of food supply—our own agricultural production had not been sufficient to supply the demand since the 'thirties. So it was that agricultural interests declined: competition was too severe for them. A large acreage was put out of cultivation. In 1874 the area under wheat was 3,821,655 acres as against about 4,000,000 in 1860. In the next twenty years there was a heavy slump—the acreage under wheat falling to about 1,900,000. Other arable crops also declined but not to the same alarming extent. The average annual acreage under cultivation during 1901–10 shows the same downward tendency—but it has slowed up considerably: wheat, 1,682,153 acres. During this same period our import of wheat has increased immensely: in 1901 our total import was 69,708,530 cwt.: in 1910 it was 105,222,638 cwt. This continuous depression lasted until the Great War brought us face to face with the German submarine blockade. With our foreign supplies largely

cut off, and compelled to make the very best of our own resources, an "agricultural crusade" took place. This most ancient of our native industries revived, and took a fresh lease of life. Wheat acreage in 1914 was 1,904,930: in 1915, it was 2,334,090; in 1918, it was nearly 3,000,000: other grain crops also rose proportionately. And in regard to the root crop—potatoes—all records were broken. It is doubtful, however, if this revival will permanently restore agriculture to a fit and healthy place in our industries. It has been largely "engineered" by governmental action, and is regarded as a "war necessity." It has been heavily subsidized by public money, and it rests upon very insecure economic foundations. When the "aftermath" of war is passed—and transport is again free to bring into our markets the food produce of the world, the strength of our revived agriculture will be put to an exceedingly severe test. The outlook is gloomy.

During the last twenty years many interesting efforts have been made to revive agriculture by "replacing men on the land." Small holdings and allotments on easy financial terms have been the most favoured systems adopted for this purpose. Their success has been very limited: they are on too small a scale to yield any satisfactory result. They are but fringes to the great and grave problem of our "dying agriculture." Stern remedies of economic reform can alone save it: and national interests demand that it should be saved.

INDUSTRIAL CONDITIONS.—We have already seen how distressingly bad were the social and industrial conditions during the industrial revolution. The unhappy lot of the workers could not remain unchanged if the welfare of the nation as a whole was to be maintained. It is therefore not surprising that since the 'thirties and 'forties a steady and

healthier improvement in the social and industrial conditions of life has been made—until to-day, the lot of the ordinary artisan, woman worker, or child-labourer is at least tolerable, and is usually such as can give contentment.

How has this large but very necessary reform been made? No single measure can be said to be responsible for it. The improvement came in many ways, and its progress was slowly carried through many stages. Having gone on for eighty odd years this "movement of social and industrial redemption" is still going slowly on. Among these "many ways," however, there are six which stand out prominently. As methods or policies of reform these six at least must be noticed. They are the highroads along which the workers of the nation have travelled, and still do, towards the goal of happy welfare. In 1830 these roads had not been cut: the goal was but a "dim dear dream": to-day, these roads exist, well made and metalled, running straight—and far ahead, on the faint horizon, can be seen the goal itself.

These six are the following: The reform of the political and municipal franchise; the reform of the Poor Law; the removal of tax restrictions on food-stuffs; the reform of industrial conditions; the right of labour to combine for united action in both industrial and political matters; and the institution of free National Education.

I. In 1832 the historic Reform Bill was passed. It secured an amended and reorganized distribution of parliamentary constituencies and a new measure of parliamentary franchise. It did not give the vote to the workers; but it was the base for further reforms which eventually won it for them. In 1867 a "second Reform Bill" was passed: in 1884 a "third." By the last, some additional 2,000,000 men were enfranchised—and it was made possible

for every adult head of a "household" to become a member of the electorate. In 1918 a "fourth" Reform Bill was passed—a very sweeping measure by which both men and women could secure the vote on light conditions. This series of great Acts has really constructed our modern political democracy. Over 20,000,000 voters now can play their part in the government of our country. Political power is therefore strongly possessed by the working classes, and the influence of this big fact on the question of industrial reform has been considerable during the past fifty years and will become even more so in the future.

Side by side with this winning of political strength must be studied the equally important movement which gave the workers the largest voice in *local* government affairs. The Municipal Corporations Act, 1835, that of 1882, the Local Government Act, 1888, and that of 1894 ought to be studied in this connexion. In general, they thoroughly reformed local Government and gave the "municipal" franchise to all ratepayers—thus allowing the ratepayers to be chiefly responsible for their own *local* government and civic welfare. This great reform naturally has had widespread influence in improving *social* conditions.

II. The economic chaos of Poor Law activity before 1834 and the successful re-organization of its administration since that date, have already been dealt with (see chapter XII).

III. The evil economic effects of taxing corn and restricting the national food supply in the first half of the nineteenth century—the fight for the Repeal of the Corn Laws—and and the national acceptance of *Free Trade* as a fiscal policy instead of mercantilism—were also important enough to be considered alone in chapter X.

IV. The reform of industrial conditions was secured chiefly by the factory legislation which we have reviewed until the 1878 and 1891 Acts and the beginning of the "eight hours day" agitation (see chapter XI.).

V. The story of labour organizing its own strength and the growth of the Trade Union as an institution of great influence in modern industrial life has been told in chapter XVIII.

VI. Lastly, the system of National (free) Education must be briefly glanced at. By "free" is meant that all those who cannot afford to educate their children privately can have them educated at the expense of the State. The Elementary and Secondary Educational Services especially provide for this need. This national system was begun in 1870. Since then it has been much improved from time to time until it is now well on the road to fulfil its great purpose—*i.e.*, to give to every child—even to the poorest—the advantages of education so that in the future our race may be both wise and healthy—two priceless privileges and necessities which only education in its full sense can give. The benefits are already to be seen. The pathetic ignorance and the callous attitude to human life of the "early period" (1760-1850) have almost disappeared from among our working classes. The ordinary worker to-day would look with horror upon such conditions—so also would employers. Bright, healthy, intelligent, skilled, strong in social and domestic instincts, the typical worker of to-day shows a keen interest in most matters, industrial, political, and social—if his efforts to improve them are *reasoned* rather than passionate as in those dark days of long ago. To an enlightened race of workers, bad conditions of life and industry are intolerable. Hence, the greater the service done by national education the greater must be the measure of needed industrial reform.

Indeed, so great is the influence of education on this question that it deserves the most serious attention.

To see how far the improvement of industrial conditions has progressed during the last part of the nineteenth century and the first part of the twentieth century, it is as well to take up the stories of the Factory Legislation and Trade Unionism where we left them in chapters XI. and XVIII. We may do this because by 1890, Trade Unionism was strongly organized—and had been an effective and growing force in the industrial world for a good fifty years before. It was the movement of labour itself: it was the self-appointed guardian of labour's interests and welfare: any improvements gained in conditions it claimed as its victories: any plan of proposed reform it demanded to approve.

Let us now state the main objects that labour set out to win through the Trade Union organization. Then let us see how far they have been gained. To increase wages of their members, to shorten the working day down to eight hours, to secure a *minimum* wage for every worker to live upon, to limit overtime, to regulate or abolish "picce-work," to safeguard the interests of apprentices, to define the "labour" of each trade, to compel all workers outside the "movement" to join in order that the "unity of labour" can be made a fact by proper organization: such are the real aims of organized labour.

The winning of the "ten hours day"—and its full establishment by the Factory Acts of 1848, 1850—proved to be the beginning of an unbroken advance in the betterment of industrial conditions. Before the Act of 1874 (Cross' Act) we find that the factory regulations had been extended to bleaching and dyeing works, most "home industries," to furnaces and forges and metal works and workshops

of various kinds. By the Act of 1874 the age of children was fixed at nine and (within a year of the Act's passing) at ten.

In 1876 a Royal Commission once more investigated the whole matter of factory and workshop conditions. It reported that in textile factories and manufactories there was a ten hours working day with two hours for meals : in other factories work took ten and a half hours, and meals were allowed the other one and a half hours. In general, children worked six and a half hours, any time between 6 a.m. and 8 p.m., and women and "young persons" put in their ten hours or ten and a half, any time between 5 a.m. and 8 p.m. These conditions seemed fairly satisfactory to our legislators : labour agitated but nothing more was done until 1886 and 1892 when the case of "sweated" shop assistants was attended to. The week's work was limited by law to seventy-two : the town and local authorities were made responsible for the administration of these Acts, and inspectors were appointed. In 1891 the age of working children was raised to eleven : and conditions of women labour were improved. In 1901 the age of working children was raised to twelve and the Saturday half-holiday to textile workers was increased by one hour. During all this time the demand for the "eight hours day" was being gradually made by organized labour : the real interest in this question of shortening the "working-day" is to be found in the long struggle to secure this great reform. With the birth of the new century the contest takes an acuter form. In the mining industry, determined efforts to secure "eight hours" had been made since 1890, when a Bill was introduced to limit the work underground of all under twenty-one years of age to eight hours a day. It was rejected. In 1892, 1893, 1897, 1900 it was also rejected. In 1908 the "eight hours" was

conceded to miners. This was the first victory of its principle. It has had an immense influence on both industry and commerce. Within eleven years, 1908-1919, the principle is not only fully accepted but actually operative in some of our greatest industries, *e.g.*, engineering, ship-building, railways, textiles, mining, and countless other institutions of a commercial and governmental nature. The economic value of the principle is to-day considered to be so favourable, that a great firm like Lever Bros. contemplate introducing a "six hours day" at Port Sunlight.

Turning to the equally important question of wages there has been a constant rise in these reckoned in money value. Reckoning the average wages earned in 1900 as equal to one hundred—we have the following interesting table—showing the general increase from 1880 to 1913 in five large representative industries.

Year.	Building Trades.	Coal Mining.	Engineering.	Textiles.	Agriculture.
1880	85.6	61.5	88.0	89.8	90.7
1890	86.7	85.9	92.7	95.1	92.0
1900	100.0	100.0	100.0	100.0	100.0
1913	104.4	100.1	105.0	111.6	111.2

The Great War 1914-18 has largely effected a solution of the wages question. So high did prices rise that big increases of wages were absolutely necessitated. In most industries the total advance was well over 100 per cent. on the 1914 rate. Moreover, the principle of the minimum wage so long voiced and struggled for by labour is now fully accepted and operative in a large number of industries, such as the five mentioned above, and even in some "sweated" trades. It is not by any means fully

and legally established for all workers, but the day cannot now be far distant when it will be.

These striking changes in "hours" and "wages" have brought about a complete change in the outlook of the worker: but they have not stood alone: other reforms have gone on even as these two main movements advanced. Sanitation in all works, factories, shops, etc., is now firmly insisted upon: light, air, cleanliness, are demanded; proper dining-rooms are provided; frequently, "rest-rooms" are established for women workers. Health is now safeguarded. Life and limb too are no longer endangered by unfenced or uncased machinery. Government regulations cover all these necessary provisions, and the employers themselves are now generally of opinion that they are wise, and need no legal threat to attend to them. Moreover, if accidents occur or life is lost, and the mischance is due to the negligence of the employer—the law now insists that a fair compensation shall be paid by him. As early as 1880 an Act was passed compelling the employer to accept this duty. In 1906 this Act was amended by the famous *Workmen's Compensation Act* by which an employer has to take all the responsibility for all accidents as well as certain diseases contracted by workers engaged in his work.

Another and most important change is this: that the right of *Free Contract*—that fact of economic freedom which was responsible for so much misery and injustice in the first half of the century—is now virtually dead. In its place has arisen a new principle—*Collective Bargaining*—and in its operation it secures a large measure of protection to the worker and a greater degree of justice. In the early days "freedom to contract" was in reality only possessed by the employers: the single worker, especially if he is hungry, cannot "bargain" with a prospective

employer. To-day, the Trade Union represents every single worker in its ranks. As a unity the workers are strong enough to *bargain collectively* with the strong employer: they can meet as equals and negotiate satisfactory terms. As we shall see, this mode of settling industrial differences is becoming more and more favoured by both sides.

As we know, child-life was totally unprotected in 1800 and for long afterwards. From 1900 onwards so much care and attention has been officially given to preserve and protect our children and "young persons" that the twentieth century is already called the "children's century." Truly our national view on this vital subject is wholly changed: this change is seen in private, public, and parliamentary life and action. In every way, socially, educationally, medically, industrially, legally, etc., our children are now cared for officially: their protection is considered a State duty. I have no space to state all that has been done with this object: but the Children's Act 1906, the First Offenders Act, the Prevention of Crimes Act, 1908: the Education Act, 1918, ought to be known: the last is important from the industrial point of view: it put an end to the iniquitous "half-time" labour of children in the textile trades; it raised the age for leaving school to fourteen; it dealt widely and firmly with the employment of children; and it provided a compulsory course of "continued education" after they have left school and until they reach sixteen or eighteen years of age. The problem and horror of children labouring in industry has been solved satisfactorily.

If the objects of Trade Unionism are now remembered it will be seen that most of them have been gained. Perhaps the big changes brought about in industrial conditions (which we have just noticed)

will be a sufficient evidence of this. With more space it would be easy to marshal many more facts to prove it.

These successes have resulted in the healthy conditions of labour now prevalent in most of our great industries. Apparently hostile in all things, and actually so in some, Trade Unionism has nevertheless given great advantages to the world of industry.

The first is that an educated Trade Unionism has killed the fear of machinery—as a competitor to human labour. The hatred of the old hand-workers to machinery—hatred which found vent in such disastrous riots as that of the Luddites in Nottingham, and the wholesale destruction of agricultural machinery and property by gangs of labourers in the early nineteenth century—has wholly gone. The elements at least of the economics of industry are now widely known. Such knowledge teaches us that machinery is a blessing—not a curse: that it *creates more labour*—not reduces it: that it is indispensable to secure the necessary vast production at the cheapest rates capitalized industry demands. Figures already given prove that there is more human labour now demanded in proportion to the population than before the advent of machinery.

Secondly, the multiple *division of labour*—the specialization in trade-function, *i.e.*, the actual part played by an artisan in the manufacture of any article, has been assisted by the Trade Union's firm attempt to define the limits of labour in any one trade or section of a trade. This "division of labour" was a result of the re-organization and expansion of industry in the factory and workshop systems. The use of machinery compelled it. It reduced a man's function—but it insisted on a high degree of skill for the fulfilment of the function—*e.g.*, the boiler-making trade, the platelayer, the "bolter" and

the "rivetter," etc., or, the "sectional" operations in a boot factory or railway workshop. The speed of industry and its efficiency were greatly increased in consequence of this system: and more work was created. Fiercely resented at first in that it prevented a man from making an article "whole" and made him responsible for a "part"—maybe a small part—in its manufacture, this method of work is now fully accepted and safeguarded as jealously by the Unions as by the employers.

Thirdly—and this is the most important—the modern danger of *Capital v. Labour* can only be turned into the future blessing of *Capital and Labour* by the goodwill and skilful leadership of labour by the Trade Unions. Labour leaders claim to be as interested in the welfare of industry as those who represent the interests of capital. To both parties it is clear that harmonious working is infinitely preferable and much more profitable than wordy warfare and discontent, resulting in strike-actions. This granted—there is at once raised the whole question of *industrial government*.

In having organized and disciplined most of the skilled labour power available, the Trade Union movement has prepared the way, so far as labour is concerned, for it to play its part in whatever form of industrial government is adopted as an alternative to the present. This advantage from the point of view of "government" has of course been largely hidden by the "recurrence of strikes" since 1907—and by the rebellious attitude of some sections of the movement to their Unions. Despite this, its *existence* ought to be noted. In the view of most of the leaders of labour, capital, and the Government, it ought to be used, if possible, to solve the one really dangerous problem still confronting industry. Proof of this is found in the proposals put forward and acted

upon in the setting up of *Arbitration and Conciliation Boards* from 1896 onwards. At these Boards the representatives of employers meet representatives of employed in the presence of a "third party" appointed by the Government, and so settle their differences peacefully by discussion and negotiation. During the ensuing period this form of "industrial government" has done much good work, especially in the iron and steel trades, boot and shoe manufacturing, textile industries, building and engineering, etc.¹ *Wages Boards* were also set up on the same principles and had a fair amount of success in the coal trade, etc.

These Boards, however, are now discredited. The "strike fever" (1907-1919) and the war (1914-18) have practically killed them—but *not the principle upon which they rest*. This is clung to by all who are vitally interested as the only safe foundation to restore peace in the industrial world. This in turn is evidenced by the *Whitley Report* (1917) which recommends the setting up of industrial councils upon which *all* interests shall be equally represented—to govern industry; and by the Government's adoption of the proposal: also by the Report of the *Coal Commission*, 1919, which advocates the setting up of national and local councils upon similar lines to govern the coal industry.

This method of industrial government will mean the co-operation of capital and labour in an ever-increasing measure. That labour is sufficiently educated and organized and disciplined enough for this big advance is doubted by some: but whatever the

¹ In 1902-1910 an annual average of twenty-three disputes involving 44,824 people were settled by conciliation. In 1911 no less than seventy disputes involving 348,333 workers were settled; twenty-two disputes involving 7,435 people were also settled by arbitration in that year.

qualifications of labour be for this new "governmental" responsibility, they are the result of the organization and education of labour by Trade Unionism and our system of National Education.

Other methods of solving the problem of *Capital v. Labour* are in action. The chief of these are co-operation, profit-sharing, and industrial co-partnership. The first is the most important (as we have seen in chapter xx). The object of the other two is to give the workers a *money-interest* in the business and so to foster loyalty and efficiency. In profit-sharing the surplus profits are divided among the workers. In industrial co-partnership so many shares in the business are made over to the workers, either by gift or by easy purchase, and the dividends accruing on the shares are paid to the employee-holders. Many different schemes of the last type exist. On the whole, however, these have not really succeeded in their object. The benefits gained by labour are thought to be too small.

All that has been written so far concerns in the main *organized* labour. But less than one third of labour can be so described. All the rest *either* share the whole or part of the benefits and privileges conceded to organized labour during this period—or, as in the case of the various "unskilled" and "hidden" or "sweated" trades, *e.g.*, cheap tailoring, millinery, bodice making, chain making, etc., etc., little or none of them. The problems of "casual" unorganized and "sweated" labour still remain. Apart from governmental action very little is done to better the "industrial" conditions of these unhappy workers. Types of general governmental action that affect this large class have already been dealt with, *e.g.*, *The Factory and Mines Regulation Acts* (1907-8), or the setting up of *Minimum Wage Boards* in certain "sweated" industries (1912).

Other Acts are—*The Employment of Women Act* (1907); *The Shops Act* (1911). Nothing effective has been done to cope with "casual" labour. The *Labour Exchanges* are not "elastic" enough to deal with it. Some relief of a temporary kind is afforded by the unemployment insurance provisions under the National Insurance Acts. The organizing of the "unorganized" and the "unskilled" is a very difficult task. But some Trade Unions, especially the Dockers' Union, show sympathy to this work and support it as far as circumstances allow.

SOCIAL CONDITIONS.—Generally speaking the bettering of social conditions has gone on side by side with—almost a part of—the long continued improvement of conditions of industrial employment. Both movements of reform re-acted upon one another. In regard to the women and children this is especially clear: moreover, shorter hours and more wages would be certain to brighten the social and domestic life of men.

But certain other large lines of approaching this question lie open to us. *Firstly*, the social chaos of the early industrial settlements has disappeared. In its place we find small or large industrial towns of the "new" type. Strong in local government, these towns are well ordered and efficiently administered. Their dirt is the "accident" of work and wealth. Rich enough to afford all the conveniences which modern social life demands, they have fully provided for them: tramways, local train services, buses and taxis are at hand to use: gas, water, electric supplies, are supplied liberally; the roads and waterways are carefully maintained; drainage, sewerage, and sanitation systems are officially controlled; public reading-rooms, libraries, museums, washhouses, baths, etc., etc., exist; police services are adequate and vigilant; law and order prevail.

In all respects, save possibly that of "housing accommodation," no civic effort has been spared to make the industrial town of modern times a decent place of social habitation. To-day, also, the "housing question" is receiving urgent and careful attention. Vast reforms are "in the air"—nay, on paper—which, if carried through, will probably see the end of the slum and back-to-back dwellings which so often disgrace an otherwise fair city or flourishing town.

Secondly, his lot is now largely controlled by the individual. He is possessed of political privileges and rights, which, if rightly used, can lead to better things. He possesses the parliamentary franchise and the local franchise. In both spheres of these public interests, he has real influence. Indeed, in the political life of the times, the ordinary man has the widest possible field of interest and activity. The "new" politics of the nineteenth century have resulted in our twentieth century democracy. If, possessing the power, a democracy cannot improve its conditions of life, then it has no right to exist—or, at least, to complain.

Thirdly, there is the enormous influence for good of education. This has been already referred to. Here it is only necessary to point out that the social life of a man is generally a true index to his degree of education. In view of this it is only right to expect this generation to enjoy a fuller social life than its predecessor, and that the oncoming will demand a still higher level of things.

To realize the vast changes which have taken place in our social state and outlook is a difficult matter for us who live in the twentieth century. It may help us to do so if we take sport and healthy amusement as an example of the many social blessings which the "new" conditions have given us. How

many boys or men had time to play in the old days? How many women or girls had leisure to seek healthy exercise? What was a holiday, then? To-day, when all have their evenings and half-holidays, when all have their annual "break," when there is time enough to read, to think, to play—time to live with comfort—it would not be amiss to think sometimes of the old dark days when those social liberties did not exist owing to the hardness of industrial conditions. Reflecting on these things we may in some small measure understand the value of our privileges to-day, and appreciate the grand movements of *change* which in the short space of eighty years have given them to us.

EXERCISES

1. Of the six influences mentioned as bringing about social and industrial reform which are the most successful?
2. What other agencies or forces besides those mentioned have assisted this big reform?
- *3. What is the chief problem of the industrial world to-day? How is it proposed to solve it?
- *4. Do you think the aims of Trade Unionism are reasonable?
5. Why will the twentieth century be known as "The Children's Century"?
- *6. Is the Social "Revolution" a consequence of the Industrial "Revolution," or is it a separate movement altogether?
- *7. How far is the policy of *laissez-faire* given up to-day?
- *8. Discuss: "The best industrial conditions are the most economic."

CHAPTER XXII

THE "WORLD-MARKET" AND THE NECESSITY TO WIN IT

WHAT is the meaning of the world-market? Simply, THE TRADE OF THE WORLD!

A market is any place in which men bargain and exchange and have commercial dealings. Every civilized and uncivilized people have their recognized markets: they are almost without number. Not only great ports or inland centres of trade, but the smaller towns and local country fairs provide markets. Now, all this great host of markets, great and small, taken together as one vast market, is the World-Market—the market in which the trade of the world is carried on.

As we have seen—under modern conditions a nation's trade is really a nation's life. Every modern civilized nation, therefore, must strive to do as much trade as possible. All nations are unfortunately compelled by this fact to be rivals in commerce. The world-market is the splendid prize they struggle to win, *i.e.*, every nation must and does try to do more trade than its rivals in the world-market.

During the past one hundred and fifty years the world has been "opened up," as men say. This means that all the land worth finding has been found, colonized, and *opened up for trading purposes*. America, both north and south, has indeed become a new and wonderful world: its tremendous expanses of land as well as its limitless natural wealth have been to some extent explored, settled, and exploited.

Our own great possessions of Australasia, New Zealand, India, our large but scattered colonies in Africa, and the many inhabitable islands of Oceania, have been largely settled and developed in the same way. Older but little known lands—vast in extent and riches too—such as China, Siberia, North Africa, etc., have during the modern age been penetrated by European influences. Indeed, nowadays, it is difficult to find any important place on the map which is not fairly well known, explored, and rapidly being “settled” and brought within the sphere of *civilized social and industrial life*.

The reasons for this intense activity in “opening up” the world are many. The chief are:

(i) The desire of European nations to get as much land as possible and to build up colonial empires.

(ii) The desire and need of exploring fully the earth, and especially newly found lands and colonial possessions.

(iii) The overwhelming increase in the population of Europe, and the need to emigrate and colonize.

(iv) The extraordinary progress made in means of communication and transport facilities.

(v) The demands of trade and commerce for new markets.

“NEW” MARKETS.—This last reason is really the vital one. Industry in Europe, and in Great Britain particularly, had expanded so enormously during this period that it had simply glutted its own markets: new outlets had to be found for its immense surplus production year by year. To every “new” land, therefore, as soon as its settlement began, this surplus was sent: “new” markets were thus swiftly made: the social needs of the colonist had to be supplied: so commercial activity became more and more widespread. “Trade followed the flag.” Everywhere the trader went seeking privileges and

profit and helping by his business and influence to create the modern commercial world. Thus has trade been the most powerful force in "opening up" the world: and the rivalry of the great modern industrial nations, Britain, Germany, Japan, U.S.A. (1890-1914) to win the lion's share of the "new" markets clearly hastened their creation and development.

So it is that *commercially* the world nowadays must be looked upon as one—as a unity. It is interesting to note also that this unity is assisted and proven by (i) modern means of transport and communication; (ii) modern system of finance.

(i) Any part of the world—any town or port, is commercially in *direct* touch (or is able to be) with any other by means of the telegraph, etc. The needs of the cotton market in India and the East are daily known to Lancashire merchants; the Japanese have an intimate knowledge of the English jute market; the farmers of Canada or cattle breeders in the Argentine know Europe's wants; and so on. The telephone, cablegram, wireless, etc., and up-to-date swift transport services have brought the *farthest* parts of the world *very near* commercially, and unquestionably bound the world-market into a closer unity.

(ii) *Finance*.—Again, the modern system of finance, credit, etc., inseparably connected with commerce as it is, is world-wide in its power and influence—a vast, delicate structure which brings the capitals and markets of our globe into almost instant and certainly sensitive relationship.

THE DEVELOPMENT OF THE WORLD-TRADE.—The world-market is the final stage in the growth of commerce. Two hundred years ago the term would have been meaningless: it would have had no corresponding fact. Then the markets of the world were of two kinds only (i) local; (ii) foreign. Foreign

trade was limited to friendly neighbouring peoples. Great Britain's, *e.g.*, was limited to the wool trade with the Low Countries, the Hanseatic and Rhine Leagues, and the traffic with our few foreign possessions. It was at its best a stunted commerce. Our *local market* was then our *true market*. Commerce was mainly domestic—as was industry. The needs of the local market were known fully: the manufacturers supplied them and were satisfied: there was practically no surplus product or glutting of markets, or anything like our modern industrial “booms” and “slumps,” *i.e.*, crises. But all this was changed after the “revolutions” of the eighteenth century. With the rise of capitalistic industry, the local market became too small to take the increasing output. Larger markets were sought: these were found in the provincial markets *i.e.*, the big towns and ports of Britain: to these the output of the factory system and machine-driven industry was sent along the improved roads and canals, and later along the railways. Soon, however, these markets, which together make up our national or home market, were glutted by the ever increasing volume of “output.”

It must be remembered here (as we saw on page 144) that modern capitalistic industry cannot limit or lower its “output” without risk of financial disaster and social suffering to the workers. This is one of its drawbacks. The huge capitalistic machine of industry, created so slowly during a century and a half, grew ever more powerful until it was too powerful to be checked or stopped. It still is. Its volume of production increases: *and no man knows if it all will be disposed of.*

So our merchants naturally turned their eyes abroad; colonial and foreign trade now began on big lines. The British Empire was a fact by this

time: "new" markets by the score were thus provided. Eagerly was every opportunity for such trade taken. The competition of France strengthened our exertions. After her colonial defeat (1761) we were left without a serious rival. Commercially, the new world lay at our feet. Our trade widened continually. From "foreign" and "colonial" it became "international": from "international" it became "world-wide." The great "boom" was upon us. Great Britain, "the nation of shop-keepers," became the "workshop of the world." And, from what has already been said about the "opening up" of the world in the nineteenth century, it can easily be imagined that it was but a natural development for our early nineteenth century trade to expand into our world-trade and our world-market of to-day.

AN ILLUSTRATION.—An example will better illustrate the growth of our world-trade than the above statement. Take the little town of Frome in Somerset. This old town was a centre of the "domestic industry" and saw the beginning of the factory system. Then, about 1720–60, it was its own market—supplying the needs of the surrounding districts. This "local market" was neglected in time for the bigger "provincial market" of Bristol. Bristol was the second city of the kingdom—a great port. This market, however, in turn gave easy approach to the American settlements: and to-day Bristol ships goods to every part of the world.¹

BRITAIN—THE WORLD TRADER.—In this "opening up" of the world, and the expansion of trade into the world-market, which nation won the most success? Great Britain, easily! She was the real pioneer among modern industrial nations. Until the end of the nineteenth century she was far ahead of all

¹ The teacher will, of course, substitute for this a more topical example, if necessary.

nations in her commercial prosperity. The monopoly of the world-market was her prize. Towards the end of the nineteenth century, however, her leading position was for the first time seriously challenged. Strong commercial rivals arose: a grim contest for supremacy resulted: it was waged relentlessly until the Great War (1914-18) stopped it; after this war it was at once renewed.

That Britain should have held the lead for so long made her rivals exceedingly jealous. The Germans used to scoff and say we were "lucky" to be first in the field when all other nations were "asleep," or economically undeveloped. There is a little truth in the gibe. But to have been first is a matter of pride to us: it shows that we alone were *ready* to profit by the golden opportunities of the eighteenth century. Three things also our foes forgot—three things which made our triumph honourable. (i) We had to fight. France, Spain, and Holland disputed the prize of colonial empire with us. We won it. (ii) The industrial revolution was an *English* revolution, English genius and industrial and mechanical skill alone gave us—and later the world—the chance of its modern commercial development. It also rightly gave us a tremendous handicap. (iii) The shipping of Britain was developed more quickly and scientifically than that of other nations. Thus, first in industrial genius and ability to profit by the revolution in industry, first in ship-building and improving of transport, first in commercial spirit and enterprise, and first in colonial achievement, it is no wonder that Britain won the trade of the world and kept it for so long.

MODERN COMMERCIAL RIVALRY FOR WORLD-MARKET.—The past twenty or twenty-five years have seen a great change come about. Germany, U.S.A., Japan, France, Holland, South American

Republics, etc., have grown commercially strong enough to attack our world-trade monopoly. This market, although expanding enormously, could not accommodate all our rivals and us. With every successive year our leadership was more closely imperilled. On the eve of the Great War Germany could claim to have almost drawn level with us in the race; and the U.S.A. was a "hot third." The following figures will show this:

	United Kingdom.	U.S.A.	Germany.
Exports 1914 . .	£526,195,523	£472,915,830	£502,532,000
Imports 1914 . .	£696,635,113	£378,785,132	£534,663,600
Total Trade 1914 .	£1, 222,830,636	£851,690,962	£1,047,195,600

EFFECTS OF THE GREAT WAR (1914-18).—The Great War (1914-18) has again profoundly changed the situation. Germany, ruined, drops out: most of the smaller nations are too weakened to enter the race again. Among European States, Britain has suffered least loss commercially and is ready to re-establish her old leadership. The general dearth has been so long and the demand for goods in the world-market is so enormous, that were Britain unchallenged she could swiftly rebuild her commercial fortunes to a higher level than ever before.

Unfortunately, U.S.A., and Japan have both come out of the war *stronger* than before, commercially. Both, alert to the unique opportunity of an almost empty world-market, are rushing in at top speed to seize it. We, handicapped by war losses, trade restrictions, and very serious labour unrest at home, cannot, it would seem, stop these two nations from taking over much of our former world-trade. Already, *e.g.*, the Americans are underselling our

exports in coal and capturing our important European markets (1919).

How to win back the lost world trade.—Severely handicapped as we are, *we must win back our commercial supremacy.* The next ten to twenty years will be critical. There must be no half measures in this fight. How can we win? Only by doing what our fathers did—WORK and WORK, produce and produce! By speeding up the industrial machine to its fastest rate! By doing nothing to hinder the progress of trade! This can be done. Our industrial organization and commercial genius are equal to the task. Yet—one great obstacle lies in the path: Labour's quarrel with Capital. This must be settled. Labour's just demands must be granted. But labour itself must realize the dangerous position both we and it are in, and that only the hardest co-operating work—the strongest effort—the fastest output—will allow us to regain our lost position as the leading world-trader.

To win back the world-market is a national necessity for us.—Our history proves that. Our commercial prosperity is the real source of all our power. This truth is basic.

EXERCISES

1. What is the world-market? How has it developed?
2. Why did Britain command it so long?
- *3. Discuss the future of world-trade.
4. Why must we win the world-market?
- *5. Is competition among industrial nations good or bad for the world?

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